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ABSTRACT

The conference focused upon two objectives: (1) exploration of the concepts of core curriculum and career mobility, and (2) examination of new avenues of approach to problems of health manpower shortages. Speeches presented in the document are: (1) "Career Mobility in the Allied Health Occupations" by Joseph Kadish, (2) "Paramedical Crazy Quilt" by Thomas Hale, (3) "Team Approach to Health Care" by Everett Belote, (4) "Changing Patterns in Education" by Vernon Wilson, (5) "Recent Legislation in Medical Education" by Edward J. Derwinski, (6) "Health Education Centers--Community College View" by Kenneth G. Skaggs, (7) "Core Curriculum and Mobility" by Robert E. Turner, (8) "Role of the American Medical Association in Paramedical Education" by C.H. William Ruhe, and (9) "Role of American Hospital Association in Paramedical Education" by Frederick N. Elliott. A panel discussion, "New Concepts of Health Education" is also presented. (JK)

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PROCEEDINGS OF SYMPOSIUM
ON
PARAMEDICAL EDUCATION AND CAREER MOBILITY

Held at

Little Company of Mary Hospital
Evergreen Park, Illinois

June 6 and 7, 1968

Sponsored by:

LITTLE COMPANY OF MARY HOSPITAL
and
MORAINE VALLEY COMMUNITY COLLEGE

With the Cooperation of:

ILLINOIS REGIONAL MEDICAL PROGRAM
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AMERICAN ASSOCIATION OF JUNIOR COLLEGES

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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FOREWORD

On June 6 and 7, 1968 Little Company of Mary Hospital and Moraine Valley Community College, with the cooperation of the Illinois Regional Medical Program and the American Association of Junior Colleges, sponsored a Symposium on "Paramedical Education and Career Mobility." The interdisciplinary conference of persons interested in paramedical education brought together administrators and faculty members of junior colleges, senior colleges, vocational education schools, hospitals and allied health programs, government officials and educators.

The Symposium was designed as an educational experience for persons working in the allied health fields. It emphasized innovations for increasing the number of existing allied health specialists and acquainted them with the creation of new fields and specialties. The Symposium stressed the interchange of ideas and experiences bearing upon two major objectives: (1) Exploration of the concepts of regional medical education, core curriculum and career mobility; and (2) examination of new avenues of approach to problems of health manpower shortages.

Conference participants, responding to these challenges, sought to identify past and present practices, compare them with the estimated needs for the future, delineate areas of potential improvement, and indicate changes needed in staffing, personnel utilization, standards of training and education, and inter-agency cooperation and coordination. The critical need for re-thinking and continual reassessment of paramedical education, commensurate with the pace of new developments, was also stressed throughout the meetings.

We believe that this Symposium posed questions and covered topics of interest to all persons involved in allied health careers and education. We are, therefore, pleased to share this unusual and provocative experience with others.

The Symposium was conducted with the support of the Task force on Education of the Illinois Regional Medical Program. Special tribute is due to Sister Mary Rosarii, L.C.M., R.N.,M.T. (ASCP), for her leadership in the development of the conference.

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HIGHLIGHTS OF THE SYMPOSIUM

The Symposium identified the crisis dimensions of the manpower shortage as the fundamental problem in the health care industry today. Symposium participants considered some of the causes of this shortage to be lack of persons entering health occupations, over-education of some personnel and under-education of others, dead-ending in education, over-compartmentalization in allied health careers, and poor utilization of personnel now available.

One possible solution to the problem of manpower shortage suggested by the Symposium would be to maintain a balance between education and training in paramedical education. In order to maintain this balance, the acquisition of education and the development of skills should offset each other. Skills can be acquired while providing useful service to society.

Innovations in paramedical education are being attempted across the United States. The core curriculum, a most promising approach to paramedical education, has already been established for many health education programs. The concept of core curriculum holds that there are courses basic to all, or most nearly all, health occupations and that there is no reason why these core courses cannot be studied at the same time by students from several health programs. After the completion of the core courses, students would fan out into their own specialties for on-the-job training. By providing a solid base, this curriculum would allow students to see the range of opportunities available in health careers and would provide for career mobility.

The concept of career mobility was of utmost interest to the participants at the Symposium. Persons should be able to move upward through the system of health occupations to the highest level of their capabilities without being blocked by artificial barriers. If paramedical personnel are to remain satisfied with their professions, opportunity to move upward and outward must exist.

On all levels of service, new careers are being developed in the health care industry. Medical schools, hospitals and universities are already training specific new specialties. Some examples of these new specialties include physicians assistants, cardio-pulmonary technicians, orthotic and prosthetic technicians, medications technicians, and certified laboratory assistants.

With all that is happening in medical and paramedical education today, it is necessary for professional organizations to reassess their role in the whole spectrum of this education. The American Medical Association and the American Hospital Association must, as they are doing, look at the roles they play in providing career mobility and a wider range of opportunities in education of medical and paramedical personnel.

The health care industry continues to be a most challenging element in our society. It involves intellectual elements - the application of knowledge and the development of skills - in terms of reference of human values and human compassion.

By incorporating innovative concepts in established as well as in new careers, by reassessing objectives, and by providing wider opportunities in the health industry, health professionals and educators can reduce the manpower shortage, build greater fulfillment into health careers, and provide more efficient health service to society.

Career Mobility in the Allied Health Occupations

Joseph Kadish, Ed.D.

Sister Mary Rosarii and the other planners of this symposium are to be congratulated for bringing together three major groups which have vital interests in health manpower and have interdependent relationships which will influence the trends of manpower programs. The Little Company of Mary Hospital is a large employer of health manpower which delivers health services; the Illinois Regional Medical Program is concerned with effective coordination and maximum utilization of health personnel and resources to provide maximum services to people; and the American Association of Junior Colleges represents one of the most significant, emerging providers of education and training for people to delivery quality health services to our population.

It is easy to belabor the health manpower shortage. Nevertheless, health manpower needs are so impressive that I would like to refer, at least, to the most recent data developed by the U.S. Department of Labor. Their report states that "...employment requirements in hospitals, nursing homes, physicians' offices, and other establishments in the health industry are expected to increase from 3.7 million to 5.35 million between 1966-75 -- an increase of about 45 percent. In addition to the need for 1.65 million workers to staff positions, about 1.0 million workers will be needed to replace workers who are expected to die, retire, or leave the labor force for other reasons."[1]

Until a few years ago, the approach to the solution of health manpower problems was thought of in terms of the need for training larger numbers of high level professional personnel, particularly physicians. Recent studies stress the enormous and, needless to say, expensive task of building, staffing, and operating new medical schools. Another observation of these studies was that highly trained health professionals were not utilizing their time and effort on a level consistent with their education and training.

The logic became more and more obvious, and recommendations proliferated, that what is needed is a greater effort to increase the number of personnel and improve the quality of education and training of paramedical, or as the Public Health Service prefers to call them, allied health personnel.

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[1] U.S. Department of Labor, Health Manpower, 1966-75, a Study of Requirements and Supply, Bureau of Labor Statistics, Report No. 323, page 1.

This recommendation was stated by the National Commission on Community Health Services. Their report on Health Manpower said that, "The most promising single measure for assuring an adequate supply of health manpower is optimal use of large numbers of allied and auxiliary personnel. Adequate numbers of such workers can permit the efficient use of highly educated and specialized personnel. Many allied health workers have a unique competence in specific segments of health service. With adequate supervision and effective liaison among related professional and occupational groups, allied health workers in different specialties and with varying levels of education and training can make an enormous contribution to enlarging the provision of community health services. Their participation in the health team can enhance the quality of services and implement the principle that health personnel should not normally be used for tasks below the level for which they are prepared."[2]

The recent rapid development of interest in the allied health occupations has given reason for considerable optimism. There is an increasing number of allied health curricula; and more experimentation with these curricula in both four year colleges and junior colleges is being tried. Secondly, there is a number of professional associations which are approving the concept of assistants in their professions as one answer to meeting manpower needs.

Thirdly, there are a few studies of the legal aspects of practice which will eventually lead to clarity as to what duties, functions, and responsibilities can be legally carried out by allied health personnel. Fourthly, specific visibility to the allied health occupations was given in the Federal Government when the Division of Allied Health Manpower was established in the Bureau of Health Manpower in January, 1967. This Division is responsible for administering the Allied Health Professions Personnel Training Act of 1966. This legislation has stimulated allied health occupations education through basic improvement grants to eligible junior colleges, colleges, and universities. Grants are available to these institutions for the development of new types of health technologists and for advanced traineeships to schools for students who will become teachers, supervisors, or administrators, or who are pursuing special areas of study in allied health fields.

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[2] National Commission on Community Health Service, Health Manpower: Action to Meet Community Needs, Report of the Task Force on Health Manpower, page 22.

I have pointed out a few very favorable developments, but there are some real concerns, too. As in any social development that progresses at a rapid pace, issues and problems are bound to emerge. It is the responsibility and mandate of professional groups such as this to identify these concerns and problems so that they do not become major road blocks as the field moves ahead. The future of the allied health occupations will be determined largely by the philosophy, principles, and practices which are adopted today and tomorrow. Waiting too long may well develop a series of problems from which all of us may find difficult to extricate ourselves.

This symposium is concerned with career mobility in the allied health field. I would like to point out some relevant issues and needs.

First, there is a need for educational institutions to develop a balance between generic and specific training. Too often, employers want, if they do not demand, workers who can step in to do specific jobs, and from their point of view, you can hardly blame them. They have jobs to be done and they need warm bodies to do these jobs. A good example is the frequently expressed interest of some employers to require health workers to operate one single piece of medical equipment, such as that used in kidney dialysis, and that is all they do.

The employment of health workers to carry out very specialized tasks tends to lock them into narrow jobs. They may be able to perform well but have no preparation for jobs on the same level, or on higher levels. These workers have jobs, not careers. It is very likely that they will eventually become discontented because they no longer have occupational goals. The employer loses also when he does not help these health workers to function according to their potential.

Hospitals and other employers of health workers should be urged to seek the health worker with a reasonably broad health background rather than the robot-like worker who is limited to a few tasks. By this I do not mean that allied health workers should all be college graduates. Persons with limited education, even high school drop-outs, should be provided with generic rather than specialized training. This, of course, puts the responsibility on the employer to teach some specific skills while on the job, and also to make arrangements with junior colleges and colleges to offer short courses and other forms of continuing education.

A good case for generic training is made by Herman Sturm, formerly with the U.S. Department of Labor and now with the Bureau of Health Manpower, who has made a study of scientific and technological developments and their effects upon health manpower.[3] He points out, for example, that patient monitoring systems will change the role of those who need to observe certain patient measurements; many diagnostic laboratory tests now performed chiefly by hand are being carried out by automatic equipment; newer x-ray equipment will enable technicians to work more quickly and more accurately, but will also require more highly trained persons than have been needed up to now; the work of medical record librarians will be largely automated.

Despite the fact that the health service industry depends largely upon what people do for people on a one to one basis, there is much evidence that there will be vast changes in the years ahead. The innovations in health technology that will most affect health manpower in the next ten years are most certainly those now being designed or adopted for use in patient care facilities. They will involve various kinds of manpower changes, including changes in job content and emergence of new jobs, as well as some labor savings. The question can be fairly asked then: How relevant is the education for specific tasks that are now performed by the various allied health occupations?

Colleges have been urged to teach the practical -- what the world of work needs. But this prodding must be stubbornly resisted in favor of the teaching of principles and concepts. One of the most prominent problems facing any college or university today is that of educating the student in ways that minimize or postpone his obsolescence once he is out of school.

The student who is prepared to be fully productive on his first day of work has been done a disservice by the college. I know that this concept is somewhat less applicable to the junior college than to other components of higher education, but I believe that basically it still applies.

Core Courses and Curriculums

With the expanding need for allied health personnel, junior colleges and colleges are adding a curriculum here and a curriculum there which results in a disjointed collection of programs that bear little or no relationship to one another. This lack of planning is a waste and is working against the achievement of desirable objectives.

The fact is that a great number of health occupations share certain background elements. For example, medical terminology, anatomy and physiology, medical ethics, and hospital organization and administration are all elements included in the preparation of allied health workers. The identification, development, and incorporation of these common denominators into core courses could produce a number of salutary effects. Commonly shared basic units of instruction aid in the integration, organization, and administration of related curricula. The opportunities of students in health occupations to rub elbows with each other, to learn of one another's occupational interest, to share in learning common information and skills may open the eyes of some trainees to interests other than their original choice. This kind of curriculum development can eliminate the "round peg in the square hole" syndrome which ultimately ends in dissatisfied employees or dropouts from the field.

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[3] U.S. Department of Labor, Technology and Manpower in the Health Service Industry 1965-75, Manpower Research Bulletin No. 14.

Another advantage of core courses is that they enhance the concept of the "health team." Through common education and training experiences, the groundwork will have begun for eventual mutual understanding, and hopefully, better cooperation among allied health workers and professionals when they work together on the job.

The actual construction of specific core courses and the development of their content are more difficult than the identification of relatively obvious areas of commonality because of the requirements of specific occupations. For example, both medical record technicians and physical therapists require knowledge of certain elements of basic anatomy and physiology but the physical therapist requires more detailed knowledge of the extremities and the muscular system. Both groups can study basic subjects together. Later each group can fan out for specialized study to meet its specific professional needs.

In addition to the development of core courses, the development of a core curriculum holds even greater potential. Health occupational training could be grouped according to patient-centered, laboratory-centered, equipment-centered, and community-centered clusters.

There is no reason why nurses, physical therapists, occupational therapists, and a few others cannot take several courses in common. If these common courses are taken in the early part of a program, students can delay the decision of career choice and can more readily move from one specialty to another without having to start over from scratch.

Job Equivalency Credit

We know that people learn in many settings other than in the classroom. This holds for workers in the health occupations too. We need to examine whether knowledge acquired non-academically is equivalent to that learned in a formal academic program.

The need for equivalency examinations for the health occupations, as for others, is based on the premises that (1) students should not be required to repeat work which they have already mastered, (2) the objectives of college course work can be achieved in other than classroom situations, (3) acquisition of knowledge and skills can be measured by examination, and (4) the results of these examinations can be used by colleges to determine whether advanced placement or academic credit should be awarded for the previous learning and experience.

Equivalency examinations have far-reaching implications for the health occupations and for unlocking dead-end careers and establishing new career ladders. We know too well conscientious workers who have all the attributes of accomplished higher level persons but are locked into a dead end. It is a challenge to provide these people with opportunities consistent with their abilities.

Some pilot studies have been conducted in nursing education and programs have been developed to bridge the educational gaps between the 3-year diploma schools and the baccalaureate programs. There are a few examples in which junior colleges are offering opportunities for advanced placement based on successful completion of examinations.

Continuing Education

Opportunity for continuing education should be available for all types of health workers to enable them to increase their knowledge and skills. Under provisions of the Regional Medical Program (P.L. 89-239), support for such programs is available. Junior colleges and colleges should seek opportunities to work with staffs of hospitals and other health facilities in upgrading jobs of health technicians and technologists. I would like to ask why continuing education programs also could not be considered for credit to promote job advancement.

Role of Hospitals in Promoting Job Mobility

On the part of hospitals and other health care facilities, there are some definite contributions which they can make with regard to job mobility of allied health workers. First, as employers they should clarify their expectations. What is sorely needed is a recognition that it is better in the long run to have an educated technician with occupational mobility than to have a robot technician stuck in a dead-end job. The agreement on the educated technician with job mobility may well be one of the necessary ingredients that keeps the health worker interested and motivated and less likely to be a health worker dropout. In the long run this kind of planning will reduce the number of people needed in health occupations.

Hospitals and other health facilities are the key to on-the-job training which is the necessary complement to the didactic teaching provided in the classroom and laboratory. Hospitals must affiliate with the ever growing number of educational institutions which provide students with the essential ingredient of practical, on-the-job, supervised learning experiences.

As employers, hospitals and other health facilities should seek opportunities for coordinated programs aimed at improving the quality of performance and upgrading allied health workers. To facilitate this there should be released time from work for study and credit toward promotions as valid motivations for workers who will improve their quality of services.

Task Analysis

Basic to the concept of job mobility is a need to take a good hard look at the duties, functions, skills and responsibilities which are required to provide necessary services to people. Only through such task analysis can there be a rational division of labor, a determination of the categories needed and the level and quality of education and training required for each occupation. Only through task analysis can there be a clear picture of what duties, functions, skills, and responsibilities can be delegated from professional levels to technologists, technicians and aides. This must be done if we agree that we cannot produce enough physicians and other highly trained personnel to handle the health care needs of the population. Task analysis is necessary if we are to develop new categories of workers, rearrange existing categories, and in the process provide clear lines of articulation between one category of health worker and another. Hospitals need to cooperate in the development of task analysis for individual health occupations or clusters of related occupations.

New Careers

Discussion of allied or paramedical careers must take note of the new careers movement. The concept of new careers, developed through programs of the U.S. Department of Labor and the Office of Economic Opportunity, supports the position that human service occupations are in need of employees and that among the economically and culturally disadvantaged are a reservoir of unemployed and underemployed persons, many of whom can make significant contributions if provided with the proper training. The position taken espouses the view that the disadvantaged have been educationally neglected and that innovative methods, geared to their special needs, should be instituted. The new careers concept is a partial answer to both the problems of unemployment and poverty, and to the needs of the health field.

One basic principle of new careers is that the disadvantaged should be screened into the human service field. Within the health field, any person - for example, a high school dropout - should be able to enter employment in a medical facility, such as a hospital, soon after enrollment in a new careers program. At first, he should be given opportunities to assist in the simplest tasks in as wide a variety of services as possible.

A second principle emphasizes the value of remedial education, particularly in those subjects which help the individual pass an examination to receive a high school graduate equivalency diploma (GED). The new careerist at this point will be on the aide level, but after a specified period, say six months, should be given a wage increase and assigned to an occupation in which he is interested and in which he shows reasonable competence.

Following completion of the GED, the new careerist should be enrolled in a junior college health occupations curriculum, with released time from his job. All the while, there should be opportunities for flexibility in his assignments at the health facility. The core curriculum at the junior college offers additional exposures to other occupations, and by the completion of the second year, which may actually take three years if pursued on a part-time basis, the new careerist will have achieved technician status in a specific occupation.

While working the technician should be able to enroll in the third year of a four year program to become a technologist in his chosen field. Upon completion he will have earned a baccalaureate degree.

If, as a technician, he does not wish to pursue a baccalaureate degree, he can take continuing education programs and in this way qualify for advancement in status.

The general pattern then is one of career mobility and built-in education and training opportunities to raise individuals from the entry level jobs to technicians and technologists on to professional status according to the ability of the trainee.

New careers have strong implications for the entire health field. The concept, in order to be one answer to the manpower shortage, must be recognized by all elements in the health complex, including the hospital, educational institution and surely among all health planning organizations and mechanisms.

I have only touched on some of the major issues relevant to concepts of career mobility in the allied health occupations. Your focus on the concept of career mobility is basic to the more effective role of allied health workers in the improvement of the health of our population. Judging by the excellent program planned for this symposium, you will hear much more about these and related issues. The outcomes of these two days will certainly help all of us as we become increasingly involved in the education, training, and utilization of allied health workers.

Paramedical Crazy-Quilt

Thomas Hale, M.D.

We find ourselves in an era marked by startling advances in our ability to dramatically aid a relatively few patients with certain types of illness. At the same time we are becoming more aware of our failure to develop a fully adequate system for the delivery of good medical care - both preventive and curative - on a routine day-to-day basis to all elements of the population. It is hoped that the Regional Medical Programs will help to alleviate this problem.

One of the main reasons for this failure is the lack of doctors, nurses, and other paramedical - or allied health - workers. No system for the distribution of health care on an even basis throughout the country can hope for any measure of success until these shortages have been overcome, in one way or another.

The problem of the doctor shortage is outside the scope of my talk today, and I will restrict myself to the paramedical groups on this occasion.

I think I could take as my text the story of the city banker who was visiting the farm. "I suppose," he said, nodding to a figure in the farm yard, "that's the hired man." "No," replied the farmer, "that's the first vice-president in charge of cows."

But that isn't really my text - I don't have a text - I just used that as an excuse to tell the story.

There are at least seventy-three so-called paramedical groups working in hospitals today. There may be many more that I have overlooked. They range in importance from vital to insignificant. Probably no single hospital has every one of these paramedical workers, and only the larger hospitals will have any great number of them.

In my discussion I would like to emphasize three problems which have gradually risen to prominence in the paramedical fields: (1) The dead-ends that exist in some of these specialties; (2) the overeducation that is now plaguing certain of the groups; and (3) the undereducation which impairs the usefulness of certain other groups. These three may occur in any combination in a given discipline. All three play a part in the shortage of paramedical specialists which impairs the effectiveness of efforts to improve the delivery of health care.

In the early development of the paramedical specialties, the sequence of events varied from group to group. Some of them became licensed or registered by the State, which then established standards "for the protection of the public." Other groups became registered or approved by the American Medical Association, when physicians became concerned about the quality of the work being done in certain areas. Others formed their own organizations and societies, which subsequently established standards. These standards were raised from time to time, making it more and more difficult for some individuals to qualify. This is a natural - one could almost say automatic - result of such group organization, but it eventually creates a conflict between the interests of the group and the interests of society.

Whether licensed by the state or not, most of the paramedical groups formed strong organizations of their own, and established their own standards for membership. Pharmacists formed the American Society of Hospital Pharmacists; dietitians formed the American Dietetic Association; medical record librarians, nurse anesthetists, operating room nurses, physical therapists have their associations. In fact, I doubt if there are very many paramedical groups which are not organized on a national level, with established membership criteria of their own.

Now it is very fine for an employee to understand the scientific reasons in back of the phenomena which he observes and works with. We have always assumed that an O.R. nurse, for example, will be a better scrub nurse if she knows the theory back of infectious disease; that a physical therapist will be better able to treat patients if he has a thorough grounding in anatomy and physiology; and that a social worker can handle patients better if he has not only a baccalaureate degree but also a master's degree. I have no doubt that all these assumptions may be correct. We have operated on these assumptions over the years, and have gotten along reasonably well with them. But we're not getting along so well now! The shortage of all types of paramedical workers is serious, and in certain cases approaches a national crisis. It is more evident every day that there is a direct causal relationship between these higher standards and the increase in manpower shortages.

I think it is time, therefore, to challenge some of our assumptions on a pragmatic basis. Let us measure end product we are producing against the actual requirements of the job, rather than attempting to justify the educational process from a strictly theoretical point of view. Instead of asking what is the most desirable type of education and training to give a paramedical worker, let's ask what is the minimum amount of education and/or training that will equip him to safely and efficiently perform his job. We must start paying more attention to the *costs* of educating and training paramedical workers. We must pay a great deal more attention to ensuring that our training and educational programs will enable us to recruit *adequate numbers* of workers in each field, and at the same time *keep them happy* doing the work that needs to be done, even if it is of a routine or even menial nature.

There is an incongruity, however, in the fact that although we are *over*-educating many of our paramedical assistants, at the same time we are *under*-educating others. With *overeducation*, shortages are created, salaries become out of line for the job that needs to be accomplished, and often the too highly educated individual is unhappy because he is asked to do work which he considers beneath his abilities and attributes. With *undereducation*, there is an obvious threat to the patient, either direct or indirect, depending on the type of worker involved.

Another problem, "*dead-ending*," is found where different levels exist within a paramedical specialty, as happens in a number of cases. The worker comes to a "dead-end" at some point in his specialty. He is blocked from further advancement in that particular discipline because no ladder has been developed by which he can advance to the next higher step without starting all over again at the bottom.

I am going to take nursing to illustrate this. I start with nursing for several reasons: (1) It represents by far the largest group of paramedical personnel; (2) it is the discipline that has the greatest number of levels, and the most clearly defined levels; and (3) it illustrates within a single discipline the whole gamut of overeducation, undereducation, and dead-ending.

At the bottom of the ladder is the Health Aide. She is a direct offspring of the nursing shortage, and is almost invariably undereducated and undertrained. Whereas Nurses' Aides and Attendants may have as much as eight to twelve weeks of on-the-job training, the Health Aide may have only two to four weeks, yet she may find herself assigned to general floor responsibilities because of the desperate shortage of more qualified workers. This is a dangerous practice, and unfair to the Health Aide as well as to the patient. The Health Aide *can* be trained, however, to do certain technical or specialized work fairly competently. And if she stays with the hospital, she may be promoted eventually to the job category of Nurses' Aide or Nurse Technician.

Nurses' Aides and Nurse Attendants are usually assigned to general floor duties after two to three months of on-the-job training. The Nurses' Aide is not a specialist, nor a technician.

She may, therefore, actually represent a greater threat to the safety of patients than the lesser trained Health Aide because she may at any moment find herself deeply involved in situations that are well beyond her ability to handle or even evaluate. She too is an end-product produced by the shortage of nurses, and would never have existed except for this shortage. She is usually under-trained and under-educated for the responsibilities often given to her. She probably would have been replaced by Practical Nurses long before this had there not been a serious shortage of Practical Nurses.

In New York City, a 14-month course of training in which Nurses' Aides may continue to work while studying to become Practical Nurses has recently been announced, sponsored by the city's Manpower Development Training Program and the Board of Education. Selected aides work in their hospitals 20 hours a week instead of 40. Salaries are reduced by half, but are supplemented with Federal funds. Instruction totals 25 hours a week. The course consists of alternate weeks of classroon instruction and in hospital training. This program represents an encouraging pioneer effort to circumvent the dead-end which exists at the nurse attendant and nurse aide level. It is yet too early, however, to judge its ultimate effectiveness.

Next on the ladder above aides or attendants are Nurse Technicians, including O.R. Technicians, Intravenous Technicians, Cardiac Intensive Care Technicians, etc. It has been pretty well proven that men and women can be trained to be Operating Room Scrub Nurses, for example, in two to six months, depending on their previous experience. To do this work safely and efficiently, they do not need to be Registered Nurses, as was thought until recent years. I am told that Cardiac Intensive Care Technicians can be trained in a relatively short period to monitor the equipment in such a unit, and that they are quite capable of carrying out this function safely and efficiently. More and more we are taking small fragments of what used to be considered Registered Nurse responsibilities, and parceling them out to individuals trained specifically for a "single purpose" job.

In the case of these technicians, we are faced however with a dead-end as far as job titles and job responsibilities go, and it does not seem possible to have it otherwise. I suspect that this group of valuable employees will find most of their recognition in the satisfaction and pleasure their jobs give them, and in their take-home pay, which can justifiably be raised to higher levels if they demonstrate their ability and loyalty over the years.

We next come to the Practical Nurse, who has been marked for extinction by the A.N.A. and certain state nurse associations (notably New York - by 1972). I believe, however, that the practical nurse is here to stay, and that she will continue for an indefinite time to supply a large part of the nursing care given in hospitals - at least 50% of all the bedside care in most cases. She does not need a college degree, nor does she need more than 12 months of an intensive course similar to the standard curriculum in practical nurse schools today.

Those who want to abolish practical nurses would replace them with community college graduates. But the majority of practical nurses would never be in nursing if their alternative was to graduate from a 2-year community college. Most of the applicants for practical nurse schools are hard-pressed financially. They could not spend an additional year without income flowing in, and this would be particularly true if they were forced to pay the higher tuition that a community college would require. In addition, the majority could not qualify for admission to a community college, and would be unable to complete the course, if admitted. The mere idea of spending two years in academic pursuits would, I am sure, deter a very substantial portion of these individuals from ever considering nursing as a career.

To destroy the practical nurse, therefore, as A.N.A. recommends, would be utter folly - it would be worse than folly - it would be calamitous. If one-half the bedside nursing in a hospital can be done by practical nurses with one year's experience - and it can be - what conceivable justification can be found for eliminating the practical nurse and having the same work done by a person with two years' experience? We would face the same trilogy - expectations and demands for higher pay, increased shortages of personnel, and individuals dissatisfied with the nature of the work assigned to them.

The practical nurse, however, does present a real problem of "dead-ending." A certain small percentage have, or develop, ambitions to become registered nurses. It has been very difficult to fit the one-year practical nurse into a 3-year hospital school curriculum, or a 2-year community college program, without starting all over from the beginning. Just because this is difficult, however, does not mean it is impossible.

The New York State Department of Education has been developing an experimental program at the Helene Fuld School of Nursing at Hospital for Joint Diseases in New York City in which they prepare the practical nurse to take her registered nurse licensing examinations in the shortest time possible. I believe the course lasts eighteen months, which makes a total of thirty months altogether when added to the twelve months of practical nurse training she has had already. I am told that in Michigan a plan is being worked out whereby practical nurses can enroll in associate degree programs, and obtain their A.A. degree in twelve months or less, depending on their ability to pass a qualifying examination. This assumes, however, that the practical nurse has had enough bedside practice in her one-year course to make her a safe and competent registered nurse, an assumption certainly open to serious question.

Next we come to the Registered Nurse in two-year community college programs. The community college graduate is in a somewhat anomalous situation in that she is entitled to call herself a nurse, but in too many instances has not been taught how to nurse. Some of us remember when State Boards of Nurse Examiners would not let a nurse from another state (or country) take licensing examinations unless she had completed the allotted number of months of pediatrics, obstetrics, communicable disease, operating room, etc. Yet these same Boards of Nurse Examiners now consider a girl eligible for licensure, and presumably a safe nurse, who to all intents and purposes has had no practical bedside experience whatsoever with responsibility for patient care. Three separate studies made by the Hospital Association of New York State have shown conclusively that most community college graduates in our state are not capable of assuming floor responsibilities in a hospital with safety to the patient, without six to twelve months of closely supervised practice. The community college graduate is definitely undertrained, even though she may have a good theoretical background.

There is no question but that we have the two-year associate degree graduate with us, and that she is here to stay. So what attitude should we take toward her? I think an internship period is the answer for these two-year graduates. Our State Hospital Association has petitioned the Board of Regents to require a one year's internship for graduates of two-year associate degree programs before they are eligible for licensure. We offer such an internship on a voluntary basis in the Albany Medical Center Hospital. It lasts one year, covers all services, and is proving very successful. Our State Hospital Association is also concerned that such an internship may be just as necessary for graduates of radically shortened hospital school programs, as for baccalaureate degree programs in our state, few of which incorporate in their curriculums any significant amount of bedside practice with responsibility for patient care.

But assuming that we can handle the internship problem, we still have the "dead-end" problem of how much credit towards a college degree these community college graduates can expect. In New York State they can expect very little. While colleges and universities rightly require proficiency examinations in each individual case, they are generally inclined to allow not more than 30-40 credits to A.A. graduates under any circumstances. They are saying more and more that it is difficult or impossible to integrate the 2-year associate degree graduate into a 4-year nursing course leading to a baccalaureate degree.

These 2-year associate degree graduates, however, have presumably had all the nursing courses they need to qualify them for licensure. So one wonders why they have to be so closely integrated into the *nursing division* of the college. If they spend their two baccalaureate years in academic subjects, (some of which could be nursing or related to nursing, but most of which would not need to be), why should they not qualify for a degree? I do not urge that they be *automatically* granted 60 full credits for the two years' work in the Junior College. But it ought to be more than 30 credits, and it certainly ought to be a lot more than *no* credits, which is what we seem to be heading for now. This failure of colleges and universities to allow proper credit to A.A. graduates produces a serious "dead-end," which adversely affects the recruitment and morale of these students.

As you are well aware, hospital diploma schools are also on the list marked for extinction by the nursing hierarchy. Here again, I believe they will survive and become stronger than ever in the future. But to accomplish this, a reversal in their current philosophy will be necessary. They need to reincorporate into their curricula the bedside practice hours which they have so complacently and shortsightedly eliminated under the not so gentle prodding of the N.L.N. Accreditation Program. The graduate of the traditional three-year hospital school is neither undereducated nor overeducated, neither undertrained nor overtrained. However, the graduate of the hospital school that has reduced its curriculum to two years is, like the community college graduate, definitely undertrained.

I can well remember the time when two full years of credit towards a B.S. degree were given by most colleges and universities for the 3 years of work done in hospital schools of nursing in New York State (assuming the individual passed a proficiency examination, which most of them were capable of doing). Even though the good 3-year programs are now stronger than they were twenty years ago, we have seen the number of credits allowed their graduates by colleges and universities drop to one year or less in my section of the country. The alarming part is that nurse educators are now saying openly, just as they say about the community college graduates, that *no credit under any circumstances should be given for any work done in a hospital school of nursing*. *This is the greatest single handicap that hospital schools face today*.

The baccalaureate program in nursing highlights the problem of *overeducation* in certain of the paramedical specialties. At the same time, it combines overeducation with undertraining. Full and sympathetic recognition must be given to the legitimate aspirations of nurses to raise their standards, increase their status and prestige, and incorporate at least some elements of nursing into the baccalaureate curriculum at the collegiate level. But this is a far cry from having all nursing become a collegiate discipline. It is a striking example of over-emphasis on the theoretical approach to the educational process without giving due attention to the practical end results.

Time and experience have shown that graduates of baccalaureate programs in nursing do not, as a rule, go into hospital nursing, and most of those few who do start in a hospital don't stay there. The mortality rate between freshman enrollment and graduation is so high that nurse educationists have apparently never dared publish any figures regarding it - at least, I have never seen any. Estimates range as high as 60-70%, but it may be even higher. There is a second round of mortality at the time of graduation which is again extremely high, marriage being the big decimator in this case. The small number of original enrollees who have survived thus far go into teaching, school nursing, public health nursing and psychiatric nursing, as a general rule, but not into hospital nursing.

I believe the time has come for colleges and universities to stop admitting girls directly from high school into their baccalaureate divisions, because this program has signally failed to produce either enough nurses or enough faculty members. Colleges and universities should concentrate on providing an opportunity for graduates of hospital diploma schools and 2-year community college schools to acquire a degree (either B.S. or B.A.) after no more than two additional years of study. They should continue, of course, to offer masters and doctoral programs for qualified bachelor of science graduates.

As I look down through the list of other paramedical groups, it seems that "dead-ending" may present a problem in some of the other disciplines, (mostly where people with the title "assistant" have been developed), undereducation does not seem to be much of a problem anywhere, but overeducation does present a serious problem in a number of cases. Let's look at Social Service for a moment.

A social service case aide (or case work assistant) can perform very capably at this level, but cannot hope to call himself a "social worker" unless he completes not only the baccalaureate course (if he has not already done so) but also an additional two years to qualify for a master's degree. In view of the nation-wide shortage of social workers, and their increasingly important role in the cradle-to-grave socialistic state we are achieving so rapidly, it seems to me that it behooves the individuals who are guiding these programs to examine carefully the minimum qualifications that are actually needed to perform capably in this field. It would seem that an associate degree might be sufficient training for an otherwise well qualified individual to become a case aide or case worker. Just as with the associate degree in nursing, however, such an individual should subsequently be able to receive two full years of credit for his associate degree work towards a baccalaureate degree in social work, - and at this point he should be a qualified "social worker." The master's degree, instead of being a requirement for all "social workers," should be reserved for the relatively small number of individuals who actually need this additional experience to qualify for supervisory and leadership positions in social service departments.

Overeducation is also creating a problem in several other fields, particularly in view of the shortages which now exist, and which can be largely attributed to this factor. Do all occupational therapists, for example, need four years of college? Do physical therapists need four years of college? Do dietitians need four years of college? Do Medical Record Librarians need four years of college? Do medical technologists need four years of college? Do pharmacists need five years of college? Although the individuals heading such departments, who carry the administrative and teaching responsibility, should certainly have a college degree, it seems apparent that a large part of the daily tasks done by workers in these fields could well be done by someone with much less training and education.

This is being proved now with laboratory assistants, physical therapy assistants, etc. Junior colleges might well give courses in these subjects, using hospitals as laboratories, if necessary. Individuals graduating from these courses could then be given the opportunity to achieve their baccalaureate degree in another two years, and qualify for registration in their specialties, if competent.

I see no real solution to the overall problem until accreditation, certification, registration and approval for all the paramedical specialties that play an important role in the hospital can somehow be centralized in one organization. State licensing would be excluded, of course. On-the-job training programs in their early stages would not be formalized enough to warrant inclusion. But all other important paramedical specialties, including those partially or totally offered in colleges and universities, should be accredited by an organization closely affiliated with the American Hospital Association, which is the only agency that has the interests of hospitalized patients as its sole and undivided concern. This would not mean that other types of accreditation would automatically be excluded - but it would mean that those groups accredited by the A.H.A. would not need to look further for approval, because their graduates would be qualified as safe and competent practitioners in any state in the union. If nursing, the largest of all the paramedical professions, could be persuaded to accept this pattern, far more than half the battle would be won overnight.

I do not minimize the problems involved. I recognize that if this should happen, proper representation would have to be given in each specific paramedical discipline to the exponents of that field. This idea was seriously proposed many years ago, but it died aborning because at that time neither nursing nor the A.M.A. were willing to cooperate. Maybe the time has come to try again, either through the A.H.A. directly, or the Joint Commission on the Accreditation of Hospitals, or some similarly constructed body. Otherwise we can look forward assuredly to increasing shortages, rapidly spiralling costs, and a continued deterioration in the quality of patient care.

Team Approach to Health Care

Everett Belote

The topic which I have been asked to discuss is phrased in such a way that it would appear to be a most appropriate subject for a discussion of health care techniques from a medical point of view. Let me assure you that I shall not attempt such an approach. I shall attempt to attract your attention to some ideas which are pertinent to the health of this nation, individually and collectively, which might not be so obvious to those of you who work directly in health care.

Quite coincidentally, I recently attended a Memorial Day program at Oak Ridge Cemetery in Springfield, Illinois. The ceremony was held at a small mound where U.S. Servicemen have been buried, just down the hill from Abraham Lincoln's tomb. Mr. John Watson, Director of the Department of Registration and Education, spoke about three basic concepts on which our nation has been founded:

1. That work is essential to the necessities, as well as some of the other things, of life.
2. Self-discipline is essential to the freedom of all.
3. Man must believe in the power greater than himself.

In his "A House Divided", speech on June 16, 1858 in Springfield, Abraham Lincoln said:

> "If we could first know where we are, and whither we are tending, we could then better judge what to do, and how to do it, we are now far into the fifth year since a policy was initiated with the avowed object and confident promise of putting an end to slavery agitation.
>
> "Under the operation of that policy that agitation has not only not ceased but has constantly augmented. In my opinion it will not cease until a crisis shall have been reached and passed. A house divided against itself cannot stand. I believe this Government cannot endure permanently half slave and half free. I do not expect the Union to be dissolved. I do not expect the house to fall. But I do expect that it will cease to be divided."

We are inclined to dismiss the issue of slavery because we assume that it deals only with that dimension about which Mr. Lincoln spoke in his time; namely, chattel property. Even Webster's Collegiate dictionary - not even the unabridged, but the Collegiate - today, defines slavery as submission to a dominating influence. The confinement of an individual under slavery as chattel property may not be nearly so devastating as the submission to a dominating influence over body, mind or spirit, such as imposed in the case of white slavery or victims of the juice racket.

The most devastating condition of all is one which submits us to the social dominating influence which says: "YOU are not needed!"

As our nation has progressed in the methods of manufacturing, we are told that the numbers of persons needed in unskilled and semi-skilled jobs continue to decline. In my humble judgment, this concept is at best a half truth because we continue to use old definitions for new conditions. To illustrate this we keep hearing that the number of persons employed in agriculture is constantly getting smaller. We are even led to the implication that agriculture, therefore, is less important in our society. At the same time we learn that the population of our nation and world continues to grow. If we expect to feed more and more people, and if agriculture is the basic source of such food, then by what logic can agriculture become less important?

The hard fact is that agriculture is NOT getting less important; and it is NOT utilizing the energies of a significantly smaller percentage of people in this country. Farming is the occupation of a decreasing percentage of our people, but not agriculture.

Fifty years ago, Agriculture meant Farming, and we have continued to use this definition. Agriculture like all other aspects of our economy has changed procedures. Figuratively speaking, instead of having four persons on the farm today using horses, we have one person on the farm using machinery and fertilizers. The other three persons are employed in off-farm, agricultural occupations, in such activities as the manufacture of machinery, the sales and service of that machinery, or the sales and service of feeds, seeds and fertilizers. We use four people in agriculture production but only one is identified under the old definition.

I think the same can be said for the percentage of persons who are employed in unskilled and semi-skilled functions. It reminds me of the two housewives who met at the supermarket. One asked the other, "How's your husband?" to which the other replied "Compared to what?"

Unskilled or semi-skilled compared to what? Compared to those functions which were considered skilled fifty years ago, or compared to the total span of activities today. How does slavery, agriculture, unskilled or semi-skilled jobs relate to our discussion? We continue to use old definitions which are no longer pertinent, thereby rejecting the potential contributions that certain members of our society could be making, and we relegate them to a condition of slavery. We deny them the opportunity which is emotionally essential to the necessities of life, even if we provide them with economic assistance. We deny them the need to exercise self-discipline, and thus in effect we are indirectly promoting irresponsible behaviour with the potential of denying freedom to all. We substitute Government or Society as a restrictive power greater than self, rather than encourage an identify with the eternal which stimulates aspirations to rise above one's own present conditions.

In contrast to our society discarding human talent in times of abundance, we have certain basic premises which should keep us from behaving in the manner that we do. Let us look at a few of these premises that are very basic to our backgrounds.

From the Judeo-Christian heritage we subscribe to the philosophy - from a lip service point of view, at least, that each person is of intrinsic and equal worth in the eyes of the Creator, irrespective of one's station on earth.

The Declaration of Independence states: "All men are created equal; that they are endowed by their Creator with certain unalienable rights, and among these are life, liberty and the pursuit of happiness."

From Education we draw the premise: The Public Schools should provide each individual with a program appropriate to his interests, capabilities and aspirations.

From Economics we draw the notion: That a free enterprise system is founded upon the premise that all persons desiring to be employed should, in fact, be employed.

And lastly, from Psychology we draw the notion: That each person needs to be reinforced with the knowledge or belief that he is important to someone else.

Combine these basic premises and you readily come to the conclusion that we should strive to utilize the energies of each person in a consortium of total efforts that would provide society with the greatest services; and would provide each individual with the psychological, moral and economic reinforcement essential to motivation. Certainly those of you involved in the health fields would agree with those of us engaged in education that the problem is much more difficult than superficial agreement or disagreement with such a statement. Those of us who are motivated individually and who identify with a particular activity need to reinforce our egos too. Therefore, we begin to rationalize that the activity in which we are involved is so important that only those persons with rather full measures of competence should engage in our activity.

Furthermore, in order to do an even better job of the group and to assure that the rest of society recognizes our expertise and accords us the proper respect, we are motivated to professionalize our group at every opportunity. Since we are individuals, we are prone to think in terms of an individual, as we define our efforts toward professionalization. Such rationalization leads us to rather drastic conclusions.

Simply let me say, as far as education is concerned, in an attempt to have our activity seen by society as respectable and prestigious, some of us really believe that we should teach the best and shoot the rest! Some people in education will not admit they subscribe to that. But I submit to you that my brief tour on this ball and my humble observations lead me to believe that in fact a large percentage of people in education DO believe it -- whether they will admit to it or not.

Thus, "dropouts" are really "pushouts." This same basic attitude is held by some person in almost every group but the manner in which it is stated must be modified in order to be applicable. CAN we afford to discard rather large segments of our population in any area of activity if we are to maintain our ideals and our free enterprise system?

We struggle with our personal motivations which are constantly in conflict with the welfare of the group. Dr. Hale said something about this this morning. We attempt to justify our actions in the light of our professed ideals; it seems to me that part of the theme for this Symposium has such a potential. In the theme: "Paramedical Education and Career Mobility," it is the Career Mobility to which I refer. The idea of career mobility encompasses the notion that we will involve a variety of individuals at various levels of activity and responsibility; and further suggests that a person should be able to move upward through the system to the highest levels of his capabilities without being blocked by artificial barriers. When we couple health services with education, in order to prepare persons for such a variety of functions, we begin to discover problems.

If we have a variety of educational programs preparatory for a variety of health care functions, then we must emphasize certain essentials for each function in each respective program; otherwise, the program is not preparatory for the function.

Then when a person who has been prepared to function in one activity wishes to move up to a more sophisticated activity, the education which they received for the first activity is not particularly applicable to the educational preparation for the second activity. Examples of this are currently reflected when a licensed practical nurse desires to become a registered nurse, when a registered nurse whose background was either an associate degree of a diploma program desires to receive a Bachelor's degree.

Under these circumstances some of us suggest shaping the practical nursing program so it is appropriate to the Associate degree, and shaping the Associate degree nursing program so it is appropriate to the Bachelor's degree. In so doing, we profess to exhibit a great concern for our fellow citizens to insure upward mobility. But in reality, we may well be showing concern for those who need it least, and continue to push aside those that have been pushed aside too long already.

If we structured a practical nursing program so that it was the first two years of a current Associate degree program it would NOT produce a Practical Nurse. Likewise, if we structured an Associate degree nursing curriculum so that it was the first two years of a current Bachelor's degree nursing curriculum, it would be almost void of those learnings essential to nursing.

Thus, if we are to make significant progress toward upward mobility insofar as educational preparation is concerned, we would need to reverse the curriculum design process from that to which I just referred, I happen to believe that it would be possible to structure a practical nursing program that would include a major portion of the concepts now taught to perhaps the greater depth. Then it would be possible to design an additional year's study for students who had satisfactorily completed the practical nursing program, which would yield essentially the same preparation as the current Associate degree program. An additional two years of study could be designed to move that student to the equivalent of the Bachelor's degree program in Nursing. Keep in mind that what I am saying is: you start out to build the first program so that the person completing it IS functional on the job for which it is preparatory. Then you restructure the next program, so that you start from the base already established.

Take a premise of educational psychology that we all have given lip service to in education: namely, that you must start from where the student is. If the student is here - and you assume the student to be here - you will lose the student through creating boredom by repeating all that is between where you assume him to be and where he, in fact, is.

Conversely, if he is here, and you assume him to be here, you inevitably will lose him through creating a different kind of void because you assumed he had a base he did not have, and thus he is never with you from the start, from the point where you start.

We have known this in educational psychology for years on end. All I'm saying is, that you are going to structure the curriculum so one program leads to more advanced work in a reasonable period of time without backtracking. You have to start with making the first function a functional design, and then take that base and redesign the next function for the added learnings necessary.

Now it is going to be quite some time before the four-year institutions and the two-year institutions ever get around to accepting that notion! But! If you took this model I just mentioned, you would be designing the one-year practical nursing program to be appropriate for ONLY those students whose abilities and aptitudes were appropriate to the Bachelor's degree program. Yes, such a system would provide maximum upward mobility for that small minority of students who initially desired to become a practical nurse and subsequently desired to become a registered nurse, and who subsequently desired to complete a Bachelor's degree.

But what would such a system do for that much larger number of persons who desire to become practical nurses, but do not have the ability, aptitudes or motivations for the more advanced levels of learning and performance?

I suggest to you it would say, "Sorry! We have no place for you."

Let me just take another example here, since I think I have time. We know that education is a significant instrument in many avenues of life. But if we also back off from our pious, academic, snobbish attitude, we in turn could very readily come to the conclusion that many other experiences in life are vital to proper performance of a job function also. Now this is really basic!

My boss was going to make a commencement speech last night and he asked me to react to the remarks that he had partially planned at that point. In them he happened to say that he did not have the capability to speak before a group to reflect the platitudes that we have professed for a long time as though they sounded like something new. Of the moment I'm trying to reflect the platitudes. But if we ever got around to accepting it - by golly it WOULD be NEW!

We profess to know certain things about psychology; we profess to know certain things about sociology; we profess to know certain other things -- then we go about our merry way reinforcing our egos from wherever we are in life and totally ignore those things we are supposed to know, in many cases.

Now when I began these remarks with a reference to slavery, perhaps many of you thought I was being unnecessarily harsh -- if not words much beyond that for desirable usage.

I simply ask you to remember the accounts of social unrest, about which we have read in the public press, heard on radio and seen on television in recent months. At the moment I am talking about the events of social nature other than those three which have attracted our attention in recent times, the last of that series of three having happened only in the last 48 hours. We had our attention drawn to those three incidents: the assassination of John F. Kennedy, Martin Luther King, and Robert Kennedy. We shook our heads and were dismayed; for a few brief days we will, in turn, think about these things. But what about a couple of other factors that we've lived with for years on end?

I heard on TV this morning, if I'm not mistaken, that we have five or fifty thousand -- I've forgotten which it is and that is an awful error -- no matter which it is, it's enough that it should have attracted our attention -- five or fifty thousand people die from gunshot wounds in this country annually. Only those three ever really got our attention.

What about the fact that in these United States we slaughter essentially 50,000 people a year at the hand of a contrivance called an automobile -- instead of a gun? I happen to hear a great deal at the moment about gun control legislation. I think the fact that it has been this long before the Congress of this country or the legislators of the states have ever tried to come to grips with this particular social issue, is a crying shame! But we haven't even got that much attention yet to the social issue of the misuse of an automobile. People stand on this platform and say, that in order for a person to be a good scrub nurse in an operating room, one should understand the theory of infectious desease. Maybe this is so; but the hard cold fact of the matter is, one can very well be a good scrub nurse and not really understand that theory at all.

Would you apply the same premise to the notion that anyone who is allowed to operate an automobile must understand all the basic principles of physics involved in the mechanical contrivance of design and maintenance? Not on your life! People who stand on this podium and say: "We can't let that person touch me as a patient unless they know all this background," will turn right around and go out and drive that machine just like it is a deadly weapon -- and would not stand still for thirty seconds to hear you suggest that they should be denied that privilege until they understand all the premises and issues back of it.

Where is the correlation in life between education and real life as it exists? I submit to you, as we talk about paramedical education -- we better begin to put together these things.

I had a very brief opportunity to interact with Dr. Hale just before he left. What we are facing, time and time again, is the fact that we have understood the premise that in order to be a good practitioner in virtually any area, you must have a component of the theoretical and a component of the practical, and the two must be interwoven. Every time we lose sight of this and think we can do the job totally by experiential, or totally by academics -- we never get the job done.

Many of us cannot understand why providing financial support for physical existence has not made many of our citizens happy. I'm talking about the social unrest, the burnings, and so forth now. We have ignored the more fundamental necessities of life in considering the persons involved. Rather than make a statement as Lincoln did, let me simply ask you a question:

> Can our nation long endure with the majority of us having economic affluence and psychological reinforcements, while a sizeable minority have only economic subsistence and are deprived of the psychological reinforcements which are essential to human life?

Take some of the opening remarks that were made here this morning, about: "We cannot afford to waste the talent of that limited amount of brain power we have by having them spend time on menial tasks". Now just let me ask you a question: How many of you in this room would be motivated under that kind of philosophy, or that kind of psychology -- if you were asked to do some of those menial tasks? In effect we are saying: "You're doing something that is not important:" you and I would not respond positively to such a statement of conditions, would we!

And we in the educational enterprise are prone to say "This kind of thing ---" and then shake our heads in disbelief and non-understanding as to why we are not attracting throngs of students to the programs which we profess will help solve problems.

Our society has generally discarded the idea of the individual craftsman for total production of the material goods. We no longer expect one professional person to perform the whole range of activities. We generally accept the notion that a group of persons, each providing some specialty, will produce goods or services. But even though we accept this general premise we frequently do not think that it is applicable to our particular area of activity. Can we avoid accepting the team approach in any major activity if we are to continue to build this nation on our professed principles? If each individual is to be of intrinsic worth then full employment is essential to the welfare of all. I implore you to make sure that the areas of health care for which you are responsible will utilize the energies of a full variety of individuals with varying capabilities; and further, that we recognize each individual in each capacity as making a significant contribution.

Changing Patterns in Education

Vernon E. Wilson, M.D.

After thinking about the very emphatic and pointed remarks made by the last speaker, I would like to do two or three things. Since the talk which I had originally prepared to give this morning has already been given, at times twice over, I've simply rewritten what I'm to say.

Let me remind this group, if I may be so audacious, that our reason for being here is that there are individuals who are ill-discovered or undiscovered and that what we are attempting to do this morning is to look for ways in which we can be of service to them, the particular way in which education can be of service in that process.

Eli Ginsburg, an economist at Columbia University, has an aphorism which has been extremely useful to me: "The depth of a crisis is the measure of the distance between expectation and realization." This simply indicates that a crisis is not a condition as such, but rather the stress resulting from a discrepancy between what people expect and how expectations are met.

We have already had several discussions of the module of education that might have, as one of the papers indicated, "instant validity." There have been implications that somehow higher education must economize. May I emphasize, to repeat a previous statement, that the largest barrier to this affecting the economy through exchange of effort is "territorial imperatives." Those of you who have not read the book Territorial Imperatives, I highly recommend it.

Let us discuss briefly a few of the challenges to which education must address itself in a changing time. One of them, in my opinion, is the passive patient. It is quite interesting that the personnel who are largest in number in the treatment process are those who produce the least, at least in planned medical care. There are large extension activities and adult education programs which have been poorly, if at all, used in the active treatment process insofar as health care is concerned. I am not so naive as to assume that one can simply state this and change it. I am merely presenting the idea for thoughtful study by a group whose major concern is education as it relates to the medical field, or health care field. I am saying that one of the educational challenges to which we need to respond is the education of the patient himself, in the matter of giving care to himself, or in preventing the need for care at all.

We have had some comments about cooperative education. I am more optimistic about the collaborative endeavor than our previous speaker has indicated. May I address myself to some of the mechanics and the reasons for my optimism. The next few statements have been made many times in many places. They were mentioned in the earliest philosophical writings and continue to be discussed, although seemingly without effecting much change.

One of the keystones upon which our current dilemma in education stands is our continuing failure to differentiate between "education" and the "transmittal or acquisition of skills." "Education" comes from a very fine Latin word "educare" - to draw out. It has nothing to do with whether or not, as a result of this drawing out, the individual will be able to earn a living. It really has to do, in its more pure form, with his ability to gain access to, or to understand, certain information. I am not in any way proposing one can educate in the absence of knowledge or in the absence of skills. I'm simply saying that as educational programs address themselves to this problem, they need to be sure that they know when they are dealing primarily with the educational process and when they are dealing with the transmission of skills.

Higher education has many inefficiencies and we won't exhaust the list for this purpose but let's name a few of them, to which some quickly suggested solutions seem apparent.

One of the interesting things that has happened in higher education is that we have used students' time very ineffectively, if one views students as potentially useful members of the society to which they belong. Somehow, we have felt that we had to continue to study in a hermitage, in so far as social action is concerned.

A second inefficiency, of which we are guilty in higher education and in educational programs of the kind with which we are associated in our hospitals and in the health field, arises from too little use of the productive capacity of the student as he achieves skills. The health field has done better in this than some other fields, but it still doesn't do anywhere near well enough.

A third problem, which has been alluded to but not discussed directly, is that we have collected students in great masses with a resultant loss of identify for the individual, and a loss in the ability of the educational system to respond to that person and his educational needs and to a lesser extent, perhaps, his skills.

A fourth development that has occurred is something our students are expressing in no uncertain terms. (They may be asking inappropriately but their concern is exactly right.) The student no longer understands why he is being educated, and at times this results from the fact that a part of the educational process has no reason for being, except that it has existed historically.

The fifth has to do with the "mass" of information, an overworked term. From my point of view this is a part of the problem, but perhaps not quite as much at the center of it as some would like to think. There is, however, a rapidly burgeoning amount of information, a relative problem at most. It is pertinent to note that some of our ancient Greek philosophers also were worried about the mass of available information!

And finally, as mentioned by a previous speaker, the whole business of the outmoded recognitions accorded by certification and degrees. In a world which is changing its information, changing its demands for use of that information and skills, we are still using a "good housekeeping" type of recognition. Degrees are not meant to puff up one's pride, nor are they primarily for entrance to a club. Originally they were intended to protect society; they were a way of recognizing the competence of the individual. Now they appear to be something which one "should" acquire, whether or not they have any usefulness. We must re-study the use of certifications and degrees, and how they are determined, kept current, or eliminated if necessary.

This semi-philosophical comment is addressed to this group because as educators and potential educators you have a leadership responsibility. Those students who come to you and are dependent upon you have a right to expect that you will prepare them for their future. While this is obviously a difficult assignment for you, they nevertheless have the right to assume that, as you deal with their educational problems, you will do so in a way which will be useful to them for at least a substantial period of their future.

As we look at the way we have been responding to this challenge, I often feel we are all sitting about trying to decide how many wagons we must build in order to make a supersonic flight. Many of our educational programs has just about that much relativity to what is potentially available and what could be used in the new educational programs. Let us quickly go to some examples.

1. We are in an action oriented field. Any bit of information we gather in the health team has as its end point a proposed action in behalf of someone. The variations of appropriate action are relatively restricted. However, we have continued to hide behind the guise of "art" and have regularly produced poor quality responses to the understood need of the patient.
2. We must stop attempting to handle all the related

> information in our heads, or with our hands. We are essentially the only profession left that is limiting the capabilities of its individuals on a guild-type system. We must find a different way to distribute the knowledge and skills which the professions need to transform into action for the patient. We must find a way to teach effectively at the geographic periphery of the educational system, and not at the center. There is absolutely no reason why universities and even junior colleges should involve themselves heavily in the transmittal of skills when there is a good way to do this in daily life. The challenge is to establish meaningful contact through informational processes with the place where the most useful work goes on.

Let's mention a field that gets varying acceptance. Some of my friends' eyes dilate when the topic is brought up; others get a hazy look. The responses are myriad. But there is a field beginning to develop called Information Science. There are now four or five universities that are beginning to try to understand what the science of transmittal of information truly means. Some have chosen to say that the science should address itself to the problem of "How do you get information into action?" It is not enough to intellectually conceive of an idea. How do you put it into action?

In our educational and research programs, we have just passed through 50 years of very intensive "dissection" effort. We have learned more and more about less and less. This effort has resulted in a stockpiling of detailed information, much of it not visibly useful. We now have the largest stockpile of lumber to build whatever this edifice is going to be that has ever been accumulated, and we are still accumulating lumber at a geometric rate of progression.

The time has come for significant research in the process of synthesis, in the restructuring of this material back into a meaningful whole. This may be what the students are telling us on the campuses and it certainly is one of the challenges for information science.

As a previous speaker indicated, the basis of our decision-making needs more careful thought. By far most of our decisions arise from our desires or emotions, rather than through logically developed intellectual processes. This is not bad per se, if we understand that this is happening and use this knowledge as a part of the communication process. Since the beginning of time, the ladies have tried to teach us that such an approach can be a direct road to a fruitful, productive and enjoyable way of life.

Perhaps not all subjects lend themselves to heavily regimented intellectual processing. If this be so, what can we do that might help to improve health?

One area where effective research is in progress is in the use of "facilitators." When a message in health needs transmission, how is it to be most quickly transmitted into action? There has been much publicity about the dangers of the cigarette. Yet very little has happened to the tobacco market. Scientifically we are certain that the cigarette does have deleterious effects for at least certain parts of the population. Still we have been quite unsuccessful in convincing most people there is any significance insofar as their daily lives are concerned. Physicians who smoke have declined in number, but they are among the few groups affected. We need thoughtful study of how information should be made available, and where it should be available.

Let's look ahead briefly now toward the promise of the new university and new information handling to be made available sometime within the next ten years. We can already see evidence of new developments. I would like to quickly suggest several that are in one or another stage of development, laboratory testing or field testing.

One such example is the computer interpretation of the electrocardiogram, with which many of you are at least partially familiar. This does some interesting things: (1) it automatically handles information; (2) it makes a consultant available 168 hours a week; (3) it helps the Cardiologist who uses it cut his work to about one-fifth of the time previously spent on reviewing EKG's; (4) it never misses a positive diagnosis, but does over-diagnose; and (5) it provides for many people a screening process not hitherto available. It is an illustration of the extension of human energy and extension of information handling capability.

A second is the Telelecture System, first started at Wisconsin, presently under test in our own institution, in which one may simply dial the telephone and come up with a brief tailor-made response to a specific question or a 20-minute lecture. This has tremendous applicability in the fields of skills as we've learned to think about them. For the hospital night time group, instructions can be left in a readily available form. A 3-minute dissertation on something that occurs only very rarely can be similarly stored. Poison control centers and many other such uses can be imagined. This fairly inexpensive methodology turns out to be a tremendous source for information handlers, and makes it possible to avoid needless memorizations of facts that are relatively rarely used.

The Computerized Fact Bank, a more sophisticated version of the telelecture, is heavily under test at the moment. This computerized program provides a quick answer to questions where a calculation is involved and provides a printed record that is individualized for a particular patient or problems. Again the computer does not tire--it is available at all hours.

The use of the computer in the diagnosis of x-rays and the use of closed circuit television need only be mentioned. Film loops for the teaching of routine skills and computer access to the past experience of the health information network are other means of dealing with the new look in information handling. There are still other ways in which one may attach information, its availability and support, as it were, for the technician, physician, or whomever else may be attempting to render a service to a patient.

It is well to remember that the suggestions listed are all under test, at one place or another. It is appropriate to ask, "All right, if you have this ability to handle a base of validated information, who is going to prepare it?" The answer is not as difficult as it might seem. University faculties and college faculties everywhere could much better use their time if they did their research on the base of validated information, to make sure that the suggested response to discovered need was an agreed upon action, ready to use. This would be greatly preferable, I think, to the repetitious, indeed boring, attempts we have made to teach students through formal lectures and laboratories.

Let me summarize then quickly by saying: All information should be available to appropriate people, and not locked in the classic medical library. Truth does not change!

Education should deal primarily with the means of access to that information; and probably most of education, as we have traditionally understood it, can take place before college.

Colleges are places where research studies, the production of new information, and the development of people who will go on providing this cutting edge should be gathered together. They should not be centers simply for stockpiling students.

Skills should be acquired while providing, as much as possible, useful services to society. There is little or no reason why most of the skill transmittal cannot be accomplished through the direct method of service which can be easily understood by society.

The patient should be activated - not left passive.

One word of caution - (My gray hair allows it) - until we can objectively measure health, and this we cannot do at the moment, we must be extremely careful of strongly centralized authoritarian control of health education or care, since the design, too, in the absence of objective measurement, must be the result of someone's opinion. We need to be very careful that we don't pick up opinion and make it law, unless we have some way to prove the validity of our actions.

The Duke University Physician's Assistant Program

D. Robert Howard, M.D.
Program Director

A few weeks ago while traveling through the mountains of western North Carolina, I became aware of a small rushing stream which followed along the course of the road. As I traveled down the mountainside towards the valley, the stream became increasingly less rampant and somewhere, by the addition of other streams, became a majestic river. When I finally turned off the highway and left my traveling companion behind, it was still a thing of vibrant beauty for which the mountainous regions of this country are so famous.

As I drove on the vision of the stream made a philosophical stain on my mind, as I reflected on its beauty I became aware of its ever softening course as the many little streams united in forming an ever enlarging river. Then I began to think about all the things that people can do to such a river. They can dam it up and build a lake, as well as use its energy to produce electricity. They can alter its course and use its water for irrigation. They can add contaminants and make it a source of liquid poison. There are, in fact, endless things people can do to such a river. Some of them can maintain or even enhance its beauty and some can ruin it completely. There are, however, only two things people cannot do to such a river:

They cannot make it flow any faster;

They cannot make it run up hill.

I began to realize how very similar such a river is to our health system. In the past centuries only small trickles of medical knowledge flowed through the generations, and the health profession was made up of only a few droplets of physicians. As time passed new knowledge was added to the stream, and the first significant tributary of allied health personnel, the Nurse, joined our stream. In this century there has been a continuous increase in the flow of knowledge into our stream as well as the addition of many new tributaries of allied health groups. In addition to all this, increased demands on and revised goals for the profession have been poured into our stream. We have suddenly become a gigantic river, and as we look forward the growth will apparently continue at a tremendous rate. We have swollen to the limits of our banks and are approaching a disastrous flood stage which, unless we modify our course, will inevitably occur.

There are those who, unable to accept change, will try to make this river flow up hill to control the dilemma. There are those who, attempting to change its course, suddenly would kick and splash in the river in an effort to increase its speed. And there are those who pollute the water in an effort to control the dilemma by covering it up. In the control and management of a river not one, but several reasonable alternatives are available either alone or in conjunction with each other. So in the controlling and management of our health problems, many alternatives are available.

Let us examine one of the main problems in the health field: that of the shortages of physicians. This shortage is not only present today, but promises to become an increasing problem in the foreseeable future. Most people agree with the National Advisory Council on Health Manpower that the need is not only for increased numbers of physicians but for an improved organization and increased efficiency in the use of available manpower. Some feel that the solution, however, is in increased numbers alone. These differences of opinion are to a degree academic since increased numbers of physicians cannot be produced in at least the next decade because of the long lag time from the acceptance of students to the appearance of new practicing physicians.

The answers must come from new organizational patterns, new technological advances, and new manpower designed to extend the physicians' services to more patients. It is the last of these techniques, the use of new categories of health manpower, that is the basis of the development of Physician's Assistant Programs around the country. To better understand the need let us look further into the physician shortage which has been one of the prime causes of the dilemma in which the health system finds itself today.

On the surface one finds approximately the same physician-patient ratio as has been present for many years. However, to look no further is indeed a mistake as several factors have adversely affected this ratio.

First, the changing role of the medical profession to assume responsibility not only for the medical treatment of the sick but the whole area of health care has been perhaps the fastest growing factor. Now we must not only provide a system of care for the sick, but a system to prevent sickness and maintain health among the well individuals.

Secondly, though we may be reluctant to admit it in the past, large segments of our population have had health care that has ranged from marginal to non-existent. Today with the increased availability of funds, medical and health care is not only virtually available to all, but is and perhaps rightly so considered a basic human right.

Thirdly, the technological revolution has vastly increased the availability of medical knowledge and almost logarithmically increased the complexity and sophistication of both the diagnostic capability and the therapeutic managements available to the medical profession. This one area alone has both drained the system for researchers and required the development of super specialization in order to develop a capability of delivery.

This has become increasingly evident as the efforts of the Regional Medical Programs continue to pursue and improve methods of delivery in the areas of heart disease, stroke and cancer. The compound effect of these three factors has been to require a complete re-evaluation which makes the comparison of the old physician-patient ratio meaningless.

In order to gain an understanding of the role of an Assistant for a physician, it is first necessary to understand the role of the physician himself. The role of the physician is extremely varied as he may work as a researcher, a teacher or a practitioner, and in any of these areas he may work in a specialized or non-specialized category. Professionally the practitioner divides his time between various institutions and his office. His institutional duties, divided largely between hospitals and nursing homes, include continual data gathering and analysis in providing the basis for continuous management programs in direct personal care. In addition to these duties involving direct patient care, the physician has other obligations associated with participation in administrative functions of the institutions. In his office setting the practitioner is involved professionally with data gathering, analysis, diagnosis and directing therapeutic management programs for his patients. These functions are both directly and indirectly related to personal patient contact.

He is also necessarily involved in the administration of a business. This area of his endeavor includes planning, purchasing, hiring of subsidiary personnel and overseeing the operation of the technical and therapeutic programs in his office. Besides the professional aspects of diagnosis and management of the ill, and administration of his business, the practitioner is involved with emergency care of patients and a wide variety of civic and social responsibilities as well.

As teacher, the physician participates in a program of continuous education and the dissemination of information to all people who participate either directly or indirectly in the health profession.

He must also develop a 2-way communication system between the health field personnel and the researcher so that the participants in the management of health problems may be continually aware of new knowledge and the best methods of its utilization, and so that the researcher on the other hand remains aware of the problems in the field of health management.

As the researcher, the physician directs his effort towards the derivation of new knowledge based, ideally at least, on the problems of health management. His work is of necessity both varied and detailed.

Although the above represent the areas of endeavor of the physician, no such clear cut delineation of his duties can be made, for the physician is seldom if ever restricted to just one area. He is, in fact, frequently involved in all three of these basic aspects.

With this understanding of the physician's role we can see the advantages of the input into our system of a single individual who is capable of assisting the physician in his entire realm of duties, and reducing the physician shortage by extending the physician's reach so that his professional services can be provided more effectively to a greater number of patients. Currently in this country many efforts are being made in this direction by various means.

One area of effort is in the upgrading of nurses to fulfill this need. Another more prolonged approach is the development of an assistant with no previous experience in the health field. At Duke University the approach has been to utilize individuals with past experience and training in the health field and to supplement this with further knowledge and more extensive application. Although there is no limitation on the basis of sex in our program we have tended to utilize males because of their greater geographic flexibility and their interest in a full time career. We also recognize that there exists a large and virtually untapped pool of personnel with these various prerequisites in the ex-military hospital corpsmen who have had substantial medical training coupled with extensive experience. Many of these people who have a great interest in the health field have been lost to other areas of endeavor because of the non-availability of a suitable health career in the civilian population.

With all these factors in mind our program was instituted to provide supplemental training to enable these individuals to function in the capacity as an assistant to a physician. On the side of the individual his acceptance is based on his academic background, his medical training and experience, his letters of recommendation, a personal interview, and psychological and aptitude tests.

The program of two full years is divided into a 9-month didactic section and a 15-month clinical section. The didactic section, based on the needs of the individual to develop a further acquaintance with the vocabulary and knowledge of the physician, includes courses in anatomy, physiology, pharmacology, nursing, laboratory techniques, electronics, physical diagnosis and public health. The clinical section includes rotation in pulmonary function, inhalation therapy, medical screening clinic, emergency room, administration, applied clinical research, and with a practicing physician outside the medical center.

In addition to these rotations which are intended to increase and solidify his clinical knowledge, the trainee may choose four clinical rotations in specialty areas of his interest. Upon completion of his training, which is aimed at providing him with a background of information, the student is granted a certificate by the Duke University and is ready for employment by a physician.

At this point, we feel the Physician's Assistant is ready and able to receive more training in his permanent position with a physician. More definitive training at the medical center is impossible because of the multitude of roles assumed by physicians.

One thing I would like to emphasize is that the intent of the program is to provide the physician with an assistant to aid him in the collection of data leading to a diagnosis and in the management thereafter as prescribed by the physician. The Physician's Assistant does not, cannot, and should not ever make a diagnosis, or prescribe management. His role is that of a dependent employee who functions exclusively under the auspices and supervision of a physician.

Now that we have observed the background, attempted to define the problem and examined our experimental solution to the problem, let us try and observe the effects of the physician assistant on our health system. Presently studies are being conducted to determine the social, economic and professional impact of the Physician's Assistant. The information available to us at this time indicates almost universal acceptance of this individual by the patient when used in this defined supportive role. The impact of this assistant on the output of the physician is still only a guess, but physicians working with our initial group of graduates estimate that they can see from 30% - 50% more patients per day by the use of an assistant. If the lower figure 30% proved to be a representative figure, and if half of the practicing physicians use such individuals, the impact would be tremendous - equivalent to approximately 50,000 physician man-years per year if this increased efficiency were used in seeing more patients. In actual use it is likely that some of the time created would be used for educational activities and in reducing the physicians work day from 16 to 12 hours. Perhaps these are equally worthy objectives.

In regards to the problems created by this addition, there have been fewer than anticipated. The problem of physician resistance has been minimal and decreases as the physicians grasp an understanding of this innovation of manpower. The legal problems are also minimal because of the fact that the Physician's Assistant plays a dependent role as an employee of a physician. In spite of this and in anticipation of the possible future legal problem, an extensive effort is being made to develop model legislation which would allow the role and status of this individual and other subsidiary personnel who are now legally poorly defined to become incorporated in a frame work including all the professional and technical personnel. The development of such a legal framework must of course provide ample protection for the patient. In addition, it has to provide a method to allow only the scrupulously controlled and comprehensively planned programs to enter the system so as to protect the health professionals and the system as well.

One other problem [illegible] the relationship of the Physician's Assistant and the Registered Nurse, and what his status is in comparison to that of the nurse. As anticipated, there were objections to the initiation of our training program, particularly among the nursing hierarchy. Many of these were misunderstandings based on fear and inadequate information. As the program has progressed most of these fears and problems have been erased. The Physician's Assistant works with the physician and does not compete nor interfere with the work of the nurse. It is true that an individual nurse can become highly skilled and a useful assistant in the same way as a Physician's Assistant and many currently operate in such a capacity. Our aim, however, is not to replace or restrict the nurse, but to meet a real need caused by an inadequate number of nurses willing or able to assume such a role.

The most real and critical problem associated with a Physician's Assistant is providing him with a career of professional status which is stable. In this day when almost everyone has a college degree, a degree which would provide a plateau from which further academic progress would be possible seems to be both desirable and advisable. At the present time this goal has not yet been achieved, but extensive efforts are being made in this direction and an early attainment of this goal looks very possible at the present time.

In conclusion we can see that in some respects the development of the modern health system is similar to the development of a river. As with the river there is a tremendous energy potential and social need. In the health arena the river is experiencing growing pains, in large part due to an insufficient number of physicians. At Duke University, an attempt is being made to overcome the shortage by developing a capable assistant for the position so that the physician's capabilities and reach can be extended. To accomplish this, we have developed a training program which utilizes an available group with previous training and experience coupled with an express desire to make a career in the health field.

Our future efforts are aimed at further refinement in the development of a truly useful and yet dependent professional person whose fulfillment and career would be as an assistant to a physician. We are working towards the end result that the Physician's Assistant will help our river flow in a more efficient and effective manner so both its function can be increased and its beauty enhanced.

Nursing

Mary Kelly Mullane, R.N., Ph.D.

It occurred to me as Dr. Howard was speaking that it might be appropriate to begin this rather brief discussion of nursing with some background comments. From many years of observation, I sense a traceable evolution among the health professions. I believe that as each profession has been confronted with public demand for service that exceeds its manpower resources, one of two adaptations has occurred. The profession "centrifuged" some of the peripheral tasks of the profession to new groups trained to perform them apart from the parent profession. The second adaptation is stratification, the creation of a corps of assistants to perform the less complex, the more routinized tasks of the profession _under the supervision_ of the parent profession.

I shall illustrate those two and then move immediately to the present scene as I see it. Forty years ago almost all of the urinalyses and blood chemistries were done by the interns. Many hospitals had no laboratory technician at all. As both the capability and the requirement for chemistry in pathology became more complex and the load larger, medicine centrifuged, identified fringe tasks of the then role of the physician and centrifuged them out, thereby creating other disciplines which since have grown up through programs in hospitals and then in universities into other fields, including laboratory technology.

Nursing, by deliberate choice in 1940, decided to stratify. I'm old enough to have been a party to the policy decision in my own profession. Registered nurses organized the first training program for practical nurses in New York City in 1940. This was our conscious choice. We stratified for what was to us a very compelling reason. Most of us believe that the central imperative in our profession is patient care. Patient safety requires that direct care of sick people must remain under the supervision of the most knowledgeable, the best trained. Incidentally, part of the present controversy over nursing education is related to stratification of nursing education between universities and junior colleges.

We are met here at a time of unprecedented public demand for health services. Few of the health professions are in supply adequate to the demand, and the older professions--medicine and nursing--are under pressure to expand their ranks far beyond any number dreamed of even five years ago. I believe that any numerical expansion of which either profession is capable will be insufficient without both increased centrifugalization and stratification. Medicine, as I pointed out earlier, began to centrifuge some forty years ago. Dr. Howard's presentation to us today describes one means of stratification of medical practice.

We nurses, in my judgment, have not centrifuged enough. Most of us in this audience are quite sophisticated about hospitals. We are fully aware that only about one third of the time of on-duty nurses is spent on care of patients. The remainder is dissipated on hospital services (record-keeping; supply; communicating messages for administration, physicians, other departments; arranging and/or supervising maintenance, housekeeping, and other services) and coordinating others' service to patients (persuading physicians who have written conflicting or no longer necessary orders to reconsider, coordinating schedules of patients in special testing or treatment departments). Whatever needs to be done that is not clearly someone else's function becomes the business of nursing. And we nurses have allowed it to become so, with mild if any protest, to the detriment of patient care and of our own practice. It is time, in my judgment, for nurses and all who work with us to explore and to quicken the application of "centrifuge" to the practice of nursing in hospitals and elsewhere.

The discussion of nursing shortage has gone on for so long that many of us assume that fewer nurses are working now. The exact opposite is true, nationally and in Illinois. There are more than 621,000 registered nurses working today in the United States--33,613 in Illinois--more than ever before in our history. And the number of registered nurses working has increased faster than our population growth. Dr. Howard said earlier that the ratio of physicians to population has been stationary for thirty years. In the same period, the ratio of registered nurses working has increased from 186 to 316 for every 100,000 Americans. In Illinois our growth has been from 214 in 1951 to 310 for each 100,000 in 1966.

You should know that the Illinois Study Commission on Nursing recently issued its report entitled, Nursing in Illinois, An Assessment, 1968, and A Plan, 1980. It may be obtained from the Illinois League for Nursing, 6355 North Broadway, Chicago. I commend this report to all who want the facts on the present supply of nurses in Illinois. The Commission's recommendations for the future must have serious study and prompt implementation if we are to have any hope of providing adequate nursing services.

The study revealed much that is known but, also, much that is startling. We have more registered nurses working in

Illinois than ever before--more than 33,000. Two out of every three registered nurses are married and homemakers as well as practicing nurses. About 23,000 (two thirds of all nurses) work in hospitals, yet hospitals report about 15% of their budgeted positions for nurses are vacant.

Our greatest shortages in nursing are not in hospitals. Public health nursing services are not universally available in Illinois; in some areas whole counties are without public health nursing services of any kind. Eighty-three per cent of those nurses engaged in community health nursing are providing those services without training in public health--an injustice both to those nurses and the patients they serve. Shortages in mental health are equally grave.

The Commission cited as the most serious shortage in Illinois nursing the lack of registered nurses educated for leadership in responsible posts in supervision, administration of nursing services, and in teaching in nursing schools. Education for such positions is available only in the graduate programs of universities. Yet only 2% of Illinois nurses had such education; only 10% had been graduated from college. Sixty per cent of the directors of nursing in Illinois have no education beyond their hospital training. Only 14% of the teachers in our nursing schools had earned a master's degree--the minimum credential for teaching high school level students. Obviously, expanding our nursing services and education for nursing will not be possible without prompt and vigorous attention to education for nursing in our universities.

The topic before us is "New Concepts in Health Education." The newest, for nursing, is that the education of nurses is coming, like the education of everyone else in our society, within the education system of the country. I am fully aware of the fact that we have many distinguished hospital schools of nursing, some better than some university schools. But that is not the point. What is increasingly important is that education of nurses should be paid for out of educational funds and not out of patients' hospital bills. Furthermore, education belongs in the educational system of the country. Though hospitals do claim a certain educational function, it is not their prime function. The prime function of a hospital is patient care.

On this kind of reasoning, one of the newest concepts is that the education of nurses belongs with the education of other health professions in the educational system of the country. Increasingly, students of nursing are being provided education organized and conducted in accord with standards long applied to the education of aspirants to other professions. Increasingly, students of nursing are sharing basic courses with students of other health professions--physiology with students of dentistry, microbiology with students of pharmacy, community health and biostatistics with students of medicine.

As Dr. Howard talked about physicians' assistants, it became clear that there might be some real fears and concerns about relationship between physicians' assistants and nurses. The difference, I believe lies in the closeness of function to the patient. Nurses enter nursing to nurse the sick. Physicians' assistants, I propose, come into that field to assist physicians. They will not care for patients as nurses do. Division of function and authority will be confronted and resolved if physicians' assistants become numerous and generally accepted.

Other new concepts of enlarging the function of professional nurses are being reported. These developments are through graduate education, specialty programs developed in the graduate colleges of distinguished universities. You know, I am sure, of the pediatric nursing specialist program at the University of Colorado--a joint program of the schools of medicine and nursing under the direction of Dr. George Silver and Dr. Loretta Ford. I've heard reports of professional nurses responsible for patient management in unique ways in the physical medicine-rehabilitation services at Montefiore Hospital in New York.

There is some dispute about whether or not there ought to be nurse-midwives. The manpower data suggest urgency in planning for future maternity and infant care services. We have something of the order of 12,000 obstetricians. About 2% of the men and women graduating from medical schools today elect general practice. It may well be that we can reverse the trend and re-establish a family physician. I certainly hope so; but my hope and my wish will not make it so. From the young people that I talk with in medical schools--my own university's and others--I do not find this happening. The young men and women I find in medical schools are, almost from the day they enter medical school, committed to a specialty. The post-war babies are about to have their babies. Safe care is the concern--the professional, intimate professional concern--of the nurses and doctors in this room. Who is going to deliver your grandchildren, your friends' grandchildren? I leave the question with you.

My own answer is that graduate work in maternity nursing would seem to be midwifery. I don't know whether the Illinois Medical Society considers this appropriate or not; but we need to find out. It is high time that the Illinois Nurses' Association and the Illinois Medical Society sat down together and figured it out.

In summary, the first development in education of nurses stems from the earlier response of professional nursing to stratify into practical nursing and professional nursing. Presently, we see professional nursing stratifying again into professional level educated in senior colleges and universities, and technical level educated in hospital schools and junior colleges. As junior colleges increase in number and size, hospital schools will quickly decline. Finally, education for nursing will, like education for all other large occupational groups, reside in the educational system of the country. The second major change in nursing is the education of clinical specialists at the graduate level, trained for greater responsibility in patient care in hospitals and outside. Please note the clinical nursing specialist will not be an independent practitioner. Anyone who claims that nursing can be independent of medicine is either foolish or does not read the law nor the times. But the supervision of medicine will be greater in distance than ever before.

I have not talked of nursing education beyond the master's degree. There is one great void I have left and I will mention it just to be sure that no one overlooks it, or thinks I have. Nursing--its capability, its technology--has already proceeded farther than intuition alone can correct. Research in nursing care is long overdue. Only research can yield clues to reform of nursing care and practice. Such research is the obligation of nursing specialists, very especially of university professors of nursing. Already begun in a few universities, it must be encouraged and supported in all.

Assistants, Technicians, Technologists

Leo J. Knaff, M.D.

Because time is running short I'll make my remarks this afternoon brief and limited to our experience at Little Company of Mary Hospital with the training of only a few types of paramedical personnel and the genesis and the evolution of these programs so you can compare and consider the practical progress made and direction that has been taken with the concepts and ideas that were so well developed by this morning's speakers.

About six years ago, the American Society of Clinical Pathologists, in cooperation with the American Society of Medical Technologists, established the Board of Certified Laboratory Assistants, to approve and work out guidelines for the training of Assistant Laboratory Technicians. The action I refer to was partly the result of a general increase in the work load of clinical laboratories, and an understanding that this great demand which now promised to double every five or six years, was a compound of two conditions: (1) An obvious large number of requests for the standard tests; and (2) the increase in numbers induced by the introduction of new and frequently more complicated tests.

Perhaps the latter factor more than any other siphoned off and absorbed much of the available talent of registered medical technologists who were traditionally trained on the baccalaureate level. Besides attempting to correct a growing deficiency in laboratory workers, creation of a board with national scope also recognized what was, in fact, already being done in many clinical laboratories where it was difficult to train or recruit sufficient medical technologists, and sought to standardize and improve this training.

Mainly through the efforts of Sister Rosarii, who for many years has been Laboratory Supervisor at Little Company of Mary Hospital, the program for training Certified Laboratory Assistants was started and was one of the first to be approved by the Board of Certified Laboratory Assistants.

The accomplishments of this program were very gratifying to us, and its popularity soon became apparent. As many as sixty to seventy applicants have been turned away every year. A prospective pool of paramedical personnel of this size quickly suggested that other programs might be equally successful;

therefore, programs for operating room technicians and medical transcribers were developed.

In considering didactic instruction to be included in the curricula of the new programs, a group of courses emerged which were obviously basic to a medical orientation, regardless of the ultimate object of the training. In this way, our first attempt at what is called a core approach to paramedical education began. The advantages in effectiveness and efficiency of a core curriculum are, at least on the surface, very appealing, so much so that it required only a little imagination to conceive of a whole family of paramedical training programs conducted on the basis of a core curriculum.

We should pause here and briefly consider the present requirements of training programs conducted for Certified Laboratory Assistants, Radiology Technicians, Operating Room Technicians, Medical Transcribers, and Inhalation Therapists. It is obvious that the following requirements are common to all of these programs: (1) Applicants must be high school graduates. (2) With the exception of radiology training, periods are generally about one year in length. (3) Much of the basic didactic instruction is similar, if not identical, in all programs.

However, we can point out some limitations in this kind of training. One of the most serious is the absence of a useful link with existing paths to higher levels of training or education, so that the student's ability to move upward is affected except at the cost of sacrificing all credit for the time and effort already expended.

In the past year a modified and newer group of programs has evolved in cooperation with the Moraine Valley Community College. These programs will be based on the concept of a core curriculum taught at the college and yielding college credits, hopefully transferrable as was suggested this morning. The core will consist of courses in anatomy, physiology, chemistry, microbiology, physics, mathematics, psychology and communications.

The training period for radiology technicians will remain two years including summer sessions, but the other programs will be extended to two years. Certified Laboratory Assistants now, I believe, will be called Certified Laboratory Technicians.

In general, the student's time will be divided about equally between the college and the appropriate hospital environment where the practical or clinical training will be given. Upon successful completion of the program, an Associate of Arts degree will be conferred.

I will not dwell on the specific features or structure of any one program now, we can leave that for discussion later, nor do I care to speculate on its ultimate success or eventual expansion. However, at the present stage it does seem that this plan promises to overcome some limitations of the older programs and provides a significantly more efficient and effective method plus a better trained student.

Mental Health Technicians, Health Care Management and Physical Therapy Assistants

Anastasia M. Hartley, R.N., M.S.

Thank you Dr. Weisberg, Sister Rosarii and Sisters of the Order of Little Company of Mary. I am delighted to have the opportunity to participate and am pleased to see concrete evidence that the Regional Medical Program for heart, stroke, cancer and other diseases is going to help provide opportunity for planning conferences in which health education can be approached on a broader basis than it has been in the past.

At the present time in the State of Florida, some very exciting programs have been developed in the last few years in the junior college setting. These programs have followed the principles as set up in the guidelines of the AAJC booklet "A Guide for Health Technology Program Planning." College representatives and professional groups have worked with the consultants in the "Technical Division, Health Area of our State Department of Education.

At St. Petersburg Junior College we have stated our philosophy of development of health care programs and are attempting to define principles in developing curriculum: (1) If we talk team, then the students should learn basic concepts together, before branching out in a specific technology. (2) The hiring institution has a responsibility for orientation and specific on-the-job, continuous, inservice education, as the employee is a changing, growing organism. (3) The door should be left open for the first semester for students who are "uncommited" by going into a Survey of Health Related Fields Course. Included in the first semester, where required, is a first session laboratory course in basic manual skills. (4) The second semester should be built upon these basic skills so that all may be at a level where some may spin off and complete their education and be given certification. This should be the first rung in the ladder. The implications are that at this level the technician knows and has been learning with the person who decides to get off the ladder or is required to remove himself from the ladder at this level of accomplishment. I am saying that all technicians in areas requiring manual skills know the same skills and study with the certified aides and receive a certificate as well as an Associate Degree. The aide may receive a certificate, but not have the 40-50% of the curriculum in general education or the depth in the special area the Associate Degree graduate has. If I may carry this concept one step further, I am saying that the medical doctor, dentist, osteopath, nursing clinical specialist, etc. starts in this first semester--possibly second semester as this core is developed and then branchs out. At present we at St. Petersburg Junior College grant equivalency credit for LPN's and veterans of the Medical Corps. They may take an examination for Survey Course and a combined practical and written test for Laboratory I, if required for the discipline.

These patterns of curriculum development take time and money, as well as a great basic ingredient--trust. Trust on the part of the professions that they will have an opportunity to express the concepts, skills and attitudes needed in the specialty area, and trust that the college will have the greater know-how in curriculum development and implementation of curriculum.

I would like to give you in depth the process and idea of one Associate Degree program which has a developmental Grant under the Allied Health Bill from the Health, Education and Welfare Department. This is a program entitled "Health Care Management." Two years ago I was invited to a meeting on the Bay Campus of the University of South Florida to explore with representatives of the Florida Nursing Home Association, Florida State Board of Health, University of South Florida and consultants of the health area of technical education in our State Department of Education. Much ground work had been done during the previous years by state universities, vocational schools and the Florida Nursing Home Association in attempting to assist in the inservice education of nursing home administrators and their staff personnel. We at St. Petersburg Junior College, with Hospital Administrators and Directors of Nursing of local hospitals, had been working on a program to prepare Unit Managers for at least three years. The real impetus that brought about the meeting at the Bay Campus, I learned, was the possibility of the passing of the Edward Kennedy Bill, which includes a level of certification for the administrators of nursing homes. Pinellas County has the largest number of nursing homes in the State of Florida--51 at present, with 1500 beds in the process of being built. We have homes with as few as 25 beds and some with as many as 400 beds. As you know, nursing homes are becoming involved with providing extended care services and requirements for care are spelled out specifically under Medicare Title XIV and XIX. This also includes the right of our senior citizens to have care in the areas of physical therapy, occupational therapy and rehabilitation nursing procedures. As you know, we do not have enough professionals to give this care and probably never will.

The outcome of many meetings was a request for St. Petersburg Junior College to apply for a grant as a pilot program. The nursing home administrators were most anxious to define what this mid-level person should know. In order to meet the need to upgrade existing administrators to ultimately become certified, the group agreed to have two semesters of evening courses and the teacher would use some of the materials for content in the two-year Associate Degree curriculum.

We felt a state-wide approach would give an orderly process for an educational system for certification to develop, as well as attempt to control the proliferation of courses in a variety of education and/or service areas. Four other junior colleges from large populated areas were invited to participate. The college anticipates some possible difficulty in getting enough nursing home administrators to make up a large enough class. The Florida Nursing Home Association is attempting to get their people to attend. We at St. Petersburg Junior College admitted 36 students in the evening class this last session and finished with 35. We anticipate all returning to complete the prescribed sequence for Session I this Fall. We now are being pressured and are considering having both the first and second portion of the evening course this Fall if at least 15 students request a new series to be started while the second course is being concluded and evaluated.

The Associate Degree students start Session I in the course Survey of Health Related Fields and the usual courses in English, Bio-physical Sciences, Psychology and Business Mathematics. The second session includes English, Principles of Supervision, Human Anat. and Physiology, Intro. to Data Processing, the course Health Care Management I (same concepts as evening but taught differently with beginning students) and 2 - 3 hour laboratories. These laboratories are conducted in nursing homes, mental health clinics, and various units in several hospitals. Each laboratory has a pre- and post-conference, including sharing of experiences in the post conference. The principles of mid-management are the same; the settings and size of agencies differ. The Sophomore year includes 2 - 3 credit courses in Principles of Accounting, Microbiology, National Government and a Social Science course (cradle to the grave - total aging process - now being researched and developed in our Social Science Department for all Junior College students), and a Humanities course selected from the general Humanities Department list of electives. There are three hours of class each session in Health Care Management II and III, and 2 - 3 hour weekly laboratory clinical experiences each session. At the completion of the program, the student is eligible to work in a large nursing home as an assistant or start a small nursing home of his own. We cannot control the graduate, but the State Board of Health and National will be developing criteria for administrators, hopefully with the program in mind. After the Associate Degree program has been completed, if there is need for one or two more to be developed, the four other junior colleges will be encouraged to develop similar programs and the materials will be shared with the participating colleges.

The broad approach, such as Health Care Administration, is needed by the junior colleges due to economic reasons and the scarcity of qualified faculty. Specialized faculty should be utilized in team teaching large numbers and have smaller numbers with new techniques of teaching, such as multiple assignment in our over-crowding health agencies. The two instructors in the present program have master's degrees, one in hospital administration.

A similar pattern has been used in Physical Therapy, with a state consultant working with representatives of our two pilot programs, and the representatives of the physical therapists in the State from the University of Florida Physical Therapy School (the National PT Curriculum Committee representative) and the practitioner. We are now meeting to set up State guidelines for program development. The Board of Medical Examiners has met informally with the group. The students under the new law will be required to take a licensing examination to become a L.P.T.A. or P.T.T. The local physical therapists are working with the two pilot programs in the colleges on content development. We have applied for a developmental grant under the Allied Health Bill. Included in the proposal is an experimental approach to the physical therapy aide (Rehabilitation aide). As I have described earlier, the ladder approach must start in junior colleges for real articulation.

The Mental Health Technical Pilot Program at Daytona Beach Junior College is now in its second year. The number of students admitted was carefully screened. The Mental Health Centers in Florida have been interested in offering their agencies for the 12-week summer practicum. The students have been offered positions in these Centers upon graduation. There are three Mental Health Centers in the State, plus the one in Daytona Beach, that are used to expose the student to different models. The emphasis of the program is placed on the philosophy that the technician will work directly with people who experience problems of living. The day-care centers, half-way houses, clinics, and home followup are all included. The primary goal in preparation for future employment is to help handle the manpower needs of the new comprehensive Mental Health Centers, as instituted by the National Institute of Mental Health. NIMH has funded this program and it is a separate program in the college. Perhaps a list of the courses would give you an idea of the kind of Associate Degree program which is being instituted. Miss Louise Atty at Daytona Beach Junior College is in charge of the program, and I am sure she would be willing to supply you with further details. Guidelines will be forthcoming from this pilot program and evaluation of the graduates will be done.

Description of the Curriculum

A balance between general education (biological, social and behavioral sciences) with creative art forms and mental health technology courses helps the student become a more effective citizen and mental health technician. Planned, supervised clinical experience in selected mental health facilities, as well as related community agencies, is an integral part of the curriculum.

Freshman Year

First Semester			Credit
EH	101	Freshman English I	3
PSY	101	General Psychology	3
ART	204	Arts and Crafts I	3
*MHT	100	Orientation to Mental Health Technology	1
*MHT	101	Psychology of Interpersonal Relations I	3
*MHT	102	Interpersonal Relations Laboratory I	4
		Total	17

Second Semester			
EH	102	Freshman English II	3
ART	205	Arts and Crafts II	3
BSE	105	Human Anatomy and Physiology	4
*MHT	103	Psychology of Interpersonal Relations II	3
*MHT	104	Interpersonal Relations Laboratory II	4
		Total	17

Summer (Term A and B)			
*MHT	105	Practicum I	6
*MHT	106	Practicum II	6
		Total	12

Sophomore Year

First Semester			
EH	232	Creative Writing	3
EH	230	Dramatics I	3
SY	201	Introduction to Sociology	3
PEH	101	Physical Education and Health	1
*MHT	201	Psychology of Interpersonal Relations III	3
*MHT	202	Interpersonal Relations Laboratory III	4
		Total	17

Second Semester			Credit
PHY	201	Introduction to Philosophy I	3
HS	211 or		
	212	Humanities	3
PEH	102	Physical Education and Health	1
*MHT	203	Psychology of Interpersonal Relations IV	3
*MHT	204	Interpersonal Relations Laboratory IV	4
*MHT	205	Mental Health Technology Seminar	1
		Total	15

Total Credits 78

*Specialized courses and clinical practicum

I wish to introduce some thoughts concerning mobility toward the upper rung of the ladder. In Florida there are two universities that start in the junior year only. We have in the State a system of junior colleges that insures a junior college within 100 miles of every potential student. Our unique universities, plus the University of South Florida (which is new), are the first to be bold enough to say, "Let's look at the ladder approach." I wrote to the three universities that have shown interest in different curriculum approaches, and I want to share these reports with you.

The University of West Florida, a new university located in Pensacola, has just completed its first year of operation. The Associate Dean, Dr. Herman Heise says: "At present, it is possible for a junior college nursing graduate to complete two years of a general education program and receive a degree from the University of West Florida. However, this is not a nursing degree but simply a teaching degree. It is our hope that the Board of Regents will, within the foreseeable future, give us permission to work out a program in conjunction with the junior college nursing programs so they will be able to get a Bachelor of Science Degree in Nursing."

Dr. Harvey Meyer of Florida Atlantic University was kind enough to share this: "We have a proposed College of Technological Studies which is intended to give an opportunity to junior college graduates in several technical disciplines to complete a Baccalaureate Degree. The initial programs receiving tentative consideration are computer programming, law-enforcement and nursing. The principle reason for choosing these is that statewide, there are over 5400 junior college enrollees in these three programs. The pattern follows the 50% general education and 50% technical depth."

The plan is to provide the high-level technical graduate with a bachelors degree tailored to his background and needs, and to the demands of society. Emphasis was made by Dr. Meyer that in such a development as this, there are many stages of discussion and approval prior to realization. So far the college has been approved at all levels up to the Council of University Presidents. They hope the council will approve and the Board of Regents would authorize its establishment effective September, 1968. I wish to reiterate that both of these proposals are just that--proposals, but I want to bring to your attention that people are concerned, interested, and trying.

In the Tampa Bay area, Dr. A. Lawton, Dean of the proposed School of Medicine authorized to start around 1971, has talked with me about the 2 + 2 program. It should be stressed that the University of South Florida will also be opening a professional baccalaureate nursing program in 1971, and this is a different kind of program. The 2 + 2 is already being explored in the School of Engineering, and the student receives a Bachelor of Arts in Technology. The students refer to the program as the "Batman."

Only the future will tell whether the above described programs will be answers to the ladder approach. The important fact now is that we do need to talk about and explore core, clusters, and track systems. The members of the health professions have an obligation to communicate better with the educators and consumers of health care. Doors should not fearfully be shut before new methods are tried. Already concern has been expressed by some members of the nursing profession about the universities wanting to try these approaches. Actually, they are not completely new. The vocabulary, our greatest problem, is different.

Perhaps conferences such as this will help communications so that we may plan an orderly system of education in the health fields on a regional basis so we may care for our patients with health services. Efficient, humane, logical, progressive planning for health education needs to be in a systems approach ideally with broad regional coordination of programs. We need to put aside our vested interests and start from the focus of patient care. The present system of health education truly needs new programming--neither the input nor the output has been satisfactory. The old method of patching up or adding ad infinitum to curriculum belongs in the pre-World War II era. Today we had better look to the new systems approach and keep our sights on long range goals, and remember when we change one phase we upset the system and balance and, therefore, we need to reprogram. This, of course, implies cooperation, open communications, elimination of professional power struggles and commitment to our health students and the health care of all of our people.

Cardio-Pulmonary Technicians

Charles J. Frahm, M.D.

In attempting to detail my views on the education of cardio-pulmonary technicians at St. Catherine's Hospital in East Chicago, Indiana, I would like to give you a bird's eye view of our facilities at St. Catherine's and represent to you some of our philosophies regarding the training of paramedical personnel.

Our cardio-pulmonary facilities are housed in a 412 bed community hospital in northwest Indiana. Approximately six years ago after having spent some time in the cardiac section at the National Heart Institute in Bethesda, I came to St. Catherine's Hospital to establish a cardiac catheterization unit. Approximately six months later the services of a Board Certified cardio-vascular surgeon were enlisted. After six months of research in our dog laboratory, to perfect the techniques in the use of the heart-lung machine, open heart surgery was initiated in June '63.

Coincident with the start of open heart surgery a cardiovascular intensive care unit was opened which consisted of six beds with the usual monitoring equipment. A specific room was set aside exclusively in surgery for perforate-vascular disease and open heart type of surgery. We received a grant of $53,000 from the Federal Government to purchase needed cardiac-catheterization equipment, and the hospital then saw fit to purchase the heart-lung machine so that we were a growing concern.

At present 1480 patients have undergone cardiac catheterization procedures and 400 open heart procedures have been performed. Approximately two years ago a pulmonary function unit was established. A 5-year Federal grant of $673,000 was awarded to St. Catherine's to find and identify early cases of chronic pulmonary emphysema. The combined staffs of the cardiopulmonary and cardiovascular surgical departments number approximately 50 personnel at the present time.

My primary concern in this particular organization is the cardiac catheterization laboratory and the training of its personnel. At the present time we have one administrative technician with a B.S. degree in biology; one chief cardiac catheterization technician who has her Bachelor's degree and ASCP rating; one registered nurse whose primary concern is the care of the patient before, during and after the procedure; an assistant chief technician with three years of college training; and two technical trainees with high school education. We also have three X-Ray technicians assigned to the cardiac lab, none of whom have a college degree but who are all registered X-ray technicians and have served an additional student year learning special cardiovascular techniques. In our chemistry laboratory we have one graduate chemist who performs the usual analyses.

The training program at the present time, consists of three separate components:

1. First and most important is on-the-job training. I cannot stress this too much. This is where the technician actually learns the practical everyday functions of the various pieces of equipment; the tenor of the laboratory, which is extremely important; and all of the everyday activities that a technician has to perform in this particular environment.

2. The second portion of the program is a formal lecture program given either by the doctor or the chief administrative technician. Subjects include basic physiology, cardiopulmonary physiology and basic medical electronics.

3. The third portion is what we call Continuing Education. We make a definite effort to enforce the third phase and to see that all of our technicians are taking college level courses either for a degree or for their own benefit, to learn more about cardiopulmonary physiology.

I consider this last portion most important as I have noticed through the years that the people who are most interested and who do the best work in the laboratory are those who continue their education after hours. These are the people who seem to be more motivated. These, in general, are the people who are excited by the challenges in their work.

Our reason for starting the training program at St. Catherine's was a selfish one in the beginning. In the earlier years of the laboratory, well trained people were extremely hard to come by. I personally had to train all of the technicians myself. With the tremendous case load increase, it became impossible to carry on all of the training duties and all of the practical everyday activities, such as seeing patients, making tentative diagnoses and performing cardiac catheterization.

We then hired the chief administrative technician with his degree in biology, to take on the burdens of administration and teaching. We were then fortunate enough to obtain the services of our chief cardiac technician who, as I mentioned before, has her bachelor's degree and A.S.C.P. rating.

I would like to quote from former Secretary of Health, Education and Welfare, John Gardener's book, EXCELLENCE, in which he mentions the great talent hunt.

> "The demand for high talent manpower is firmly rooted in the level of technological complexity which characterizes modern life, and in the complexity of modern social organization and more important than either of these is the rate of innovation and change in both technological and social spirit.
>
> "In a world that is rocking with change, we need more than anything else a high capacity for adjustment to changed circumstances; a capacity for innovation.
>
> "The solutions we hit on today will be outmoded tomorrow. Only high ability and sound education equip a man for the continuous seeking of new solutions. We don't even know what skills may be needed in the years ahead. That is why we must train our ablest men and women in the fundamental fields of knowledge and equip them to understand and cope with change. That is why we must give them the critical qualities of mind and durable qualities of character which will serve them in circumstances we cannot now even predict. It is not just technical competence which is needed; a society such as ours is dependent on many kinds of environment; of many kinds of achievement and many kinds of complex understanding.
>
> "It requires large numbers of individuals with depth of judgement, perspective and a broad comprehension of the problems facing our world."

One of the basic philosophies which pervades our particular unit is that each individual should be able to develop his potential to the utmost; therefore, we see that there are crossings of disciplines. For example, for several years now we have not had the services of a nurse. Therefore, the chief technician has had to assume some of the duties of administering medication, talking to the patient and performing many duties which under normal circumstances a nurse would be doing as part of her routine work.

I recall that when I was at NIH where gigantic amounts of funds were available we had a nurse who did absolutely nothing except talk to the patient during the catheterization procedures. She was a tremendous person, had a great gift of gab and completely distracted even young children during these complicated procedures, so that many times anesthesia was not required.

We do not feel that the patient has suffered a great deal from this particular loss. At the same time, the increased case load has made it increasingly difficult for one person to assume so many tasks. The important thing to understand is that it is not the particular job that is difficult for the technician to assume, but the multiplicity of activities. We do not believe rigid job descriptions should hinder qualified persons from performing any task which they are capable of performing.

We are able to see that after a period of time, each person will fit into his or her particular slot, working according to his inclinations and doing HIS job, to the best of his ability. We approach each person with complete honesty and this allows him a maximum of freedom to perform the tasks that he enjoys - and I stress that word "enjoy" - and to perform them very well.

Approximately two years ago an association of cardiopulmonary technicians was established. They recently held a meeting in Boston. One of the most discussed points at the meeting was: How can we achieve status as cardiopulmonary technicians? Most of the people attending the meeting were technicians or persons interested in this paramedical training program. I am sure that if this organization follows the guidelines of most organizations, it will eventually establish itself as an entity and begin to set standards which will be followed, as the X-ray technicians and other societies now do. I believe this is good and that it will help to establish minimal standards which are badly needed in this area. But I do not believe that in the individual laboratory these standards should preclude people from doing other work which is demanded of them.

I think that in most fields there is an almost unlimited opportunity for technicians to assume many of the tasks which have been assigned to interns, to residents, and even to research fellows in cardiology. In our laboratory all of the catheterization calculations which may take up to one or two hours are performed by the chief technician. The results are checked by the doctor and the final report is dictated by the doctor.

These calculations were previously done by interns and residents, but I see no reason why the technician, with proper medical insight and training, cannot assume these particular functions, especially in a society where we are so short of physicians. Many community hospitals do not have a residency staff so this would be a perfectly natural course to follow. We have been doing this for five years and have found that the challenge to the technician allows him to converse with the doctor on a higher level and also to astound some resident physicians with the amount of knowledge he has on his own. This comes from being intimately connected, not only with the purely technical features of the case but some of the abnormal pathophysiology.

In one of our coronary care units we have personally given 100 hours of complex electrocardiographic interpretation courses to several nurses. We find that two of these nurses now can interpret complex arrhythmias better than most of the internists. This is not implying that the physicians are, in any way, inept at interpreting these arrhythmias but it is a very clear example of how training in a specific area can be mastered by a nurse. This particular type of training can be life saving to the patient because many times the physician is not there to interpret the arrhythmia, and the nurse must act in a specific way when she sees a certain arrhythmia. Eventually, this is going to enable the coronary care unit to save many patients who have previously died without prompt attention.

To sum up our brief conversation concerning the training of cardiopulmonary technicians, I would like to say that I sincerely believe there are many responsible actions a well-trained cardiopulmonary technician or nurse can assume in the care of critically ill patients with or without doctors present for supervision. This may sound radical, but I think, as we discuss this in the panel, it will be fairly clear. I think we are now entering an era in medicine where many complex actions can be taught to certain authorized personnel who are not physicians, which will enable them to act in a reasonable accurate manner in short periods of time to save patients lives when the physicians are not present.

In order to keep trained personnel excited with their work, they must continually expand their knowledge not only in their own field, but press on into fields of endeavor which relate to their own. I have seen this type of philosophy work, particularly while in the cardiac catheterization laboratory and I have also seen it work in coronary and intensive care units.

In order to have proficiency in these particular types of operations nurses must have a valid identity with the physician and they must know that he knows that they can perform things which are beyond the usual reach of the ordinary technician or the ordinary nurse. I think that this is absolutely necessary because all of us must remember that in some cardiovascular emergencies we have approximately four minutes in which to work and the physician is not available within that period. There is absolutely no need to restrict nurses from either a medical or a legal standpoint at these critical periods. Sometimes, the only person who can make the judgment within that short period is not the coronary care committee, or the physician in charge of the case who may be in his office, but the nurse who is on duty at the patient's bedside.

I think, as in many other disciplines in medicine, it is the patient who often determines our actions.

Cooperative Programs between Colleges and Hospitals

John F. Grede, Ph.D.

I'm not sure but what my subject isn't a redundancy because I'm not sure programs in health occupations, at least at the junior college level, could be programs unless they were cooperative. I'm not sure that any other kind of program would be meaningful. For the junior colleges "cooperation" means essentially cooperation with community health facilities and community agencies. I think this is important not only for health programs, but for the community colleges generally. If there's one thing that a community college offers which is distinct from that of our traditional institutions of higher education, it is that it doesn't consider itself the impartial critic of society standing apart from it, but rather it looks upon itself as a full partner and participant in society and gets itself up to its eyeballs in the problems of society. I think this is best illustrated by the cooperative programs in health occupations.

Perhaps cooperative programs in community colleges are better developed in health occupations than in any other area of occupational programs that community colleges provide. I think there are two main reasons for this:

1. It's obvious that it's virtually impossible for a community college to operate a facility of hospital magnitude and complexity in its own right as some universities do, and it's also equally impossible for them to provide the necessary qualified staff. I say this with tongue in cheek because there may be some rabid junior colleges that are already considering owning and operating their own hospital.

2. The whole health field is a well organized area, or perhaps I should say, it's a field of many organizations. But there is much professional organization; there is certification; there is licensure; there are requirements which generally preclude a new educational institution from carving out an independent and self-contained type of educational program.

For these and other reasons cooperative programs and health programs I think, are synonymous; but the kinds of cooperation that exist are varied, and health programs have moved in many directions. Since my experience is limited, I simply want to talk to you about a few variations that we've encountered in the Chicago City Colleges.

Our own experience indicates that cooperation is not an entity; it's really a continuum. It's really a spectrum, with all shades of joint effort being involved, and quite often the issue of who actually controls the program - who is really calling the shots - is sometimes pretty much blurred, in contrast to the theoretical concept. This is presented in the document that Mrs. Hartley talked about, "The Guide to Health Technology Programs." The issue of who controls the program there is indicated, of course, as being the educational institution, but I'm not sure it is absolutely this way in practice. It's a concept dear to the academic world, and one that the junior colleges have taken on, but I think sometimes the issue becomes quite blurred and perhaps properly so.

Let me just give you a few illustrations of what I mean by cooperation as a continuum or a spectrum rather than an entity.

On one end of the continuum, the City College and many other community colleges offer courses - didactic courses, academic courses - in support of diploma programs of nursing. We have perhaps a dozen hospitals in Chicago with which we are cooperating by offering the required academic courses, such as English, Biology, etc. In this case, the junior college has very little influence, and practically no control, on the nursing program itself.

On the other hand, you can move to the far end of the continuum to the Associate Degree programs in nursing where, at least from the junior college standpoint, total control resides with the educational institution which contracts for clinical facilities, but the instructional staff is part of the college faculty.

In between these two extremes, however, I think there are many interesting variations. One I happened to be associated with here in Chicago is out at Southeast Campus, and it came to be, not as a creation of the community college, but actually from the initiative of the Orthotic-Prosthetic Education Division of the Northwestern Medical School. This is a program that trains technicians to design, fabricate, and fit artificial limbs, prosthesis.

The Northwestern Medical School had been operating a program which was approximately a year in length but sought upgrading and updating for this program and wanted a liaison with the community college, which could provide a kind of back-up in basic science and some of the other antecedents to the practical portion of the program. What eventually came out -

and this has now been in operation for about three years - is that we have almost a split, right down the middle where the City College really offers one year of the program, and it's not wholly didactic. There are some parts of the program that deal with materials and with some of the equipment that's used in the fabricating process - sewing machines, etc.

The second year, which is largely manipulative and mostly fabricating, is taught at the rehabilitation hospital with which Northwestern University Prosthetic-Orthotic education is affiliated. Through this association most of the patient contact is arranged.

So you have one year in a community college and the second year in an additional institution of higher education as part of its medical school program.

Chicago City College then places an accreditation umbrella over the whole complex and issues an Associate in Arts Degree. We actually list the Northwestern University courses in our catalogue as an integral part of the operation.

We have a coordinator who ties these two years of training together, but we really have two semi-autonomous halves of a cooperative program.

The other type of program that I would like to talk about is the brand new - since September, 1967 anyhow - Allied Health Program which is offered at the West Side Campus, now called Crane, eventually to be replaced by a brand new campus to be opened about 1970.

This is an additional variation on the concept of cooperation, and I think the one that we're developing on the West Side is most promising for a number of reasons but largely because we are an urban based institution and have problems that are not common to all community colleges.

The Allied Health Program is important, I think, for two obvious reasons:

1. It provides desperately needed trained personnel in the Aide category. This program lasts less than one year, and produces such personnel as operating room technicians, ward clerks, inhalation therapy aides, transfusion therapy aides, occupational therapy aides - some eleven specialties of this kind.

2. Partly because the program is pitched at the aide level, it provides the kind of training and education within the present ability level, and still is of sufficient interest to a large part of the

> remedial and basic types of students, many of whom are from the West Side ghetto area in Chicago, who come to the City College. A sizeable percentage of our enrollment is students who cannot, at least at their present stage, handle the conventional types of programs, even the conventional Associate in Arts programs that are most common to community colleges.

A good many of these people are in need of subsistence and we currently have underwritten perhaps about a third to a half of the students in the program for subsistence while they're going through it. This program starts where the student's ability level is, and I think this is an important point to make. It's a twenty-eight-week program, divided into two fourteen-week halves. The first half is basic education; the second half is on-the-job training. It is very much like the medical corpsmen program which has been so successful in the Navy.

The first half of the program is basic core, into which all of the students who commit themselves to what we call Allied Health are enrolled. They take this core for fourteen weeks before they fan out into one of some eleven specialties in on-the-job training. The core program is taught by the regular college faculty and has what we call junior college credit. It's not necessarily transferrable credit and actually includes two separate cores:

One, a general education core, is basically English, communication, speech, reading, and some computational skills.

The Second is more appropriately a health core, which includes an introduction to health occupations and basic science concepts, some basic medical concepts, some introduction to the nursing arts and some basic behavioral concepts.

The second half of the program is specifically on-the-job-training. We now have four cooperating hospitals and the clinical training portion of the program is provided in small groups under hospital personnel. What we, in effect, use for this part of the program are full-time hospital staff members who are released for a substantial time for the instructional program. The Chicago City College actually contracts with the hospital for their services.

The administration of the program is under the director of Allied Health Programs, a member of the College staff, who, herself, is a nurse, and who has had experience in developing similar programs for the Chicago Board of Education. Over and above this liaison between the City College and the hospital, in this case Presbyterian-St. Luke's, we have an M.D., Dr. Peter

Ferrago, who is in the hospital and coordinates classroon study with clinical experiences. He holds a joint appointment - he has one foot in the junior college and one foot on the hospital staff, and of course, he is paid jointly by both intitutions. The clinical instructors are on the hospital staff but also hold joint appointments in the Community College.

Now this is the contract that we are working with, it's been in operation since September, 1967. We have some problems and it is quite experimental, but there are some indications that reasonable success has been achieved. We had our first graduation in early April, 1968. There were forty graduates, distributed this way:

eight inhalation therapy aides
eleven ward clerks
nine operating room technicians
two transfusion therapy aides
two recreation therapy aides
four physical therapy aides
four occupational therapy aides

All of these graduates were employed even before they graduated from the program.

We look to this cooperative approach on the West Side as a prototype to be incorporated in our new West Side Campus when it opens. We expect to transplant and extend this aide program as a floor for what has conventionally been called a career ladder.

Perhaps, we ought to call it a career spectrum. I think there's some concern that when you talk about ladders, you're talking about higher and lower, and we get into a whole status question which sometimes militates against motivation in some of these lower levels. At any rate, the emphasis in the program is upon career mobility, the concept of an open-end curriculum wherein interested and capable students who complete, for example, the inhalation therapy aide program and get some experience on the job may, if they are so moved and have the capacity to go further, may move into a inhalation therapist program which is in the planning for September. Eventually we hope to have this in several different categories so a student is not dead-ended, but has other opportunities available.

In summary, let me say that first of all, the Allied Health Program, in many respects, is a capstone of a cooperative approach. To date it has been highly satisfactory as a cooperative program between a public community college, and a public and private hospital and is satisfactory to all, including the student.

Secondly, it provides the desperately needed personnel in the aide category which, alternatively, hospitals would have to provide by hiring individuals and giving them some type of short-term, in-service training.

Thirdly, it provides a type of program within the interest and ability level of many inner city students, the kind of student who is very characteristic of an urban community college. The student can get training and a satisfying job, plus the opportunity for career mobility in a minimum of time.

This program uses, in addition, the flexible core concept whereby students can fan out into a specialty. It is an economical operation from an administrative standpoint; it permits the student to get more information on a broader range of specialties before he actually makes up his mind about which specific specialty he wants to enter.

Last of all- and I can say this because my concern is not only with health occupations but with many kinds of occupational programs - it is a possible prototype for the kinds of programs in occupational education which the community college more and more may find itself confronted with. It is also the type of program which combines basic education with on-the-job-training, and I think the promise of this approach is most significant for the future.

The Dental Auxiliaries

Maury Massler, D.D.S., M.S.

I've been asked to discuss what the different members of the dental health team do, or are expected to do in the near future, as a basis for the organization of learning experiences for its various members. Presumably, this is to round out the picture in paramedical education.

Perhaps the best way to define what the dental assistant does, what the dental laboratory technician does, and what the dental hygienist does, is to briefly review the evolution of these workers - what they have done in the past, what they do today, and what we believe they will be doing in 1980.

During the depression period , prior to World War II and for some time afterwards, a dentist practiced in isolation. His wife or mother was his combined chairside assistant and telephone answering service. Along with this, she invested and cast some of the gold inlays, did the charwoman chores, and helped at night when the dentist himself did his own laboratory work. In those days, it cost $6.00 to send out a denture for processing by a commercial laboratory, and $6.00 was a lot of money! So, he stayed late at night and did it himself. The dentist spent a great deal of time doing the many things which today his ancillaries do for him.

Immediately after the war period, the dentist became more aware of the needs of the public, and the demands by the public increased, it became apparent that he needed some assistance in the office to meet those demands. In the early days, a high school youngster was trained by the dentist in his office to do the many "out-of-the-mouth" chores that needed doing -- making appointments, setting up instruments, cleaning up after each patient, and sending out bills. Almost all dental assistants were trained on the job.

Sometimes the dentist had a secretary and she answered the telephone. That eliminated the repeated washing of the hands before and after answering the phone. Perhaps Mother took care of the fees. She still does, sometimes. By 1948, and certainly by 1952, we began to realize that with one dental assistant trained to do many of the things which we had been doing ourselves, and with another chair in the office, we could take care of 33% more patients. This figure is important not only because of the population explosion, but because today the American public is more aware of the prevention of dental diseases. The demand from the public for dental services has reached such high proportions that, in general, unless there is an acute, painful emergency, a patient may wait two or three weeks before the dentist can find an open appointment time. This means that we have had to move rather quickly towards having not only two chairs, but two dental assistants -- one roving assistant and one chairside assistant. We have had to learn to work more effectively and more efficiently by sitting down, thus avoiding aching backs, fatigue and short tempers at the end of the day. And we have had to learn 4-handed and 6-handed dentistry -- with at least one or 2 assistants at the chair.

We have developed new equipment and technologies which enable us to take care of about 3 times the number of patients today as we took care of 20 years ago. All this must be understood if one wants to recognize the place of the dental ancillary in the dental health team. I use the term "health team" rather than "tooth repair team" because there is a difference between the two.

By 1955, dentists acquired another helper, the dental hygienist. By that time, dentists had become overloaded with the repair work that the American public presented to us - decayed teeth in children and young adults; the periodontal diseases of the gingivae and attachment apparatus in the older age group; and the enormous amount of malocclusions which doting fathers and mothers insisted that we correct.

Fifteen years ago, the science of periodontology was very young. It consisted of chipping off calculus (or tartar) and polishing the tooth surface. This was a tedious job, although a very essential part of the dental health treatment. It was not repair work; it was prevention of periodontal disease. Nonetheless, we were so overwhelmed with repair work that we needed a hygienist to do the prevention work. It is very interesting to note the shift towards the prevention of dental and oral diseases. I think the dental hygienist is becoming our Health Officer - our preventive aide. This is a marvelous opportunity for young women to engage in a professional career not at a sub-professional or ancillary level, but as a member of a health team. I believe that dentistry has the foresight and intelligence to take advantage of the situation to promote preventive dental care.

We also needed dental laboratory technicians. I must pause to point out that laboratory technicians in the United States are quite different from those trained in Scandinavia. The dental lab. technician in the United States was, and still is, trained (not educated) in a commercial laboratory on the job. A young man (this is always a man's job in America) enters a commercial laboratory. He is taught to pour plaster models, to fabricate gold appliances, to cast inlays, to make the complicated apparatuses that we use -- the crowns, bridge work, partials, and so on, in a purely mechanical and imitative fashion.

This is unfortunate because in the United States today we have inherited a problem. Technicians, not being under the aegis of the academic community, have begun to practice dentistry illegally in their laboratories, usually fitting dentures, sometimes with dire results. This has become a problem in Canada, also.

In Scandinavian countries, where the best dental technologists are educated, training is a part of the academic institution. High schools prepare young people with the cooperation of the dental communities and the dental schools, so that they have avoided this difficulty. We also hope to do as well in the near future.

There is at present a great need for better educated dental assistants. The dental assistant is the young lady who stands at the chairside, hands the instruments to the dentist, and does many of the things which the dentist used to have to reach for alone. We speak today of 4-handed and 6-handed dentistry because many successful dentists have two dental assistants who prepare the instruments, sterilize them and assist the dentist at the chair much as the surgical nurse assists the surgeon in the operating room. She makes possible the treatment of 3 times the number of patients we could manage in 1940.

Many dental educators would like to have even more of the non-critical intra-oral work delegated to these young ladies. Many dentists and academicians believe she should be given the opportunity to work inside of the mouth, to do the polishing of fillings and much of the non-critical but necessary work that the dentist, even today, does by himself. For this purpose, we need not only a skillful person, a person who knows how to mix cement, but an intelligent and mature person.

The dental hygienist, at the present time, is the only licensed person who is entitled to work within the mouth. She usually has a 2-year educational program and she more or less works alone -- that is, she sees the patient alone in a chair under the supervision of the dentist who is usually working in another room. As we see her role today, we think it also must be enlarged considerably. At the present time, she is doing work which was common work 10 to 20 years ago. But the science of periodontology has a half-life of three years. With modern investigations and research, we have gone a quantum jump ahead, and I see her role in the future as greatly expanding. As I said before, perhaps she will be the Dental Health Officer of the near future. That is, when the dentist has completed all the repair work in a patient's mouth, this patient is placed on a maintenance (re-call) program. Most of you are recalled by your dentist at periodical intervals, in order to insure the prevention of disease. Since the dentist and his dental assistant are still heavily engaged in disease repair, perhaps the hygienist will be the one to call you back to examine your mouth, do the necessary cleaning and polishing of teeth, and to call to the attention of the dentist any minor repairs which may arise in the interval.

What about the dental technologist, the laboratory technician? It seems quite clear that to continue to fight them by legislation is self-defeating. We need rather to welcome them into the professional community and to utilize their time and their intelligence in the best way possible for the patient's need.

I'd like to say a word about what we consider to be a Core Curriculum as we understand it today. We would greatly appreciate your taking over the pre-dental education of these young people. But as we see it today, we are not so much interested in how much microbiology or physiological anatomy students memorize, but rather their intelligence, maturity, and motivation. Dental practice requires a close inter-personal relation between the dentist, his assistants, and his patients. It is the personal relationship to the patient that is most important in dental practice. We are dealing with healthy people and we are generally regarded as a family type of "doctor-dentist." The patients stay with us for years. A properly oriented dental assistant can build up a practice. A smart-aleck can ruin it. We depend very heavily upon her to listen to the small complaints from each patient, keep the records, make the notation about the birthday of the child, et cetera, et cetera.

So we ask that you include in your Core Curriculum more of the humanities and humanisms; a little more on interpersonal relationships; the difference between the fear of a child and the anxieties of an aging patient. Her entire educational orientation needs to be reviewed carefully by you and us in concert. Give us intelligent, deeply motivated and humane young people with a cultured background -- and we can take care of the details like mixing cements and polishing teeth. Give us good people and we can make good professionals out of them.

Questions and Answers

Harry F. Weisberg, M.D.
Moderator

We have some questions which we will start with. I will read the questions so you will be able to hear them.

Moderator: Dr. Howard, I understand your selection process for the Physician's Assistant Program is more extensive than is generally required for those admitted to Bachelor degree programs generally. Insofar as that process assesses the academic capability and/or aptitudes, do you require the physician assistant applicant to equal or exceed the general requirements to Bachelor degree programs?

Dr. Howard: This is somewhat difficult to answer as there seem to be several questions. As far as what we expect of the applicant on the basis of course work, this is at least on the equal to the requirement for general Bachelor degree programs. In handling this, we find that the people we picked averaged 120 on the I.Q. tests. The student in the past have had little difficulty with the courses when they applied themselves. I think so far, we have only flunked out two students, just enough, you know, to keep the rest of them working.

Moderator: Dr. Mullane, in your judgment, what percentage of the registered nurses, presently, would like to reverse the decision to stratify nursing and eliminate the practical nurses from the scene? Do I understand you correctly, if I hear you saying that the centrifuge process should now take place above and beyond the present stratification, rather than replace or reverse stratification?

Dr. Mullane: Like Dr. Howard, I think I have about three questions there. May I take the first one first?

There is a great deal of discussion about the wisdom of stratifying, of having practical nurses. When we look at the manpower--nursepower that is--requirements for nursing homes, for home care services for the sick, for a good many of the inadequately staffed services for patients, any discussion of elimination of practical nursing, I consider to be shortsighted. The practical nurses whom I have known have done a superb job. I believe that they have found, by the quality of their services, a continuing place in hospitals. I hope that they will continue and expand their services in nursing homes. Without them, we are not going to take care of the aged in our society, in my judgment.

As for the second part of the question, you do understand me correctly: centrifuging of certain tasks nurses now perform seems urgent. Those things that I call hospital services, such as inventory control, messenger service, and telephone services, should be centrifuged to recapture scarce nursing time for patient care. When our junior colleges in Chicago and elsewhere give us trained ward clerks, we shall be able to move quite rapidly, I hope, into centrifuging the kinds of things that I'm talking about.

Moderator: Dr. Knaff, I hear C.L.A. Programs are to be phased out by the ASCP in five years. At present, many of these schools have scheduled courses of 18 or 24 months. What happens to these programs?

Dr. Knaff: All I know about the phasing out of the CLA schools is what I've read in the newspapers or heard second hand. I believe that the present discussion is between the relevant committees of the American Society of Medical Technologists and the American Society of Clinical Pathologists. Discussions are taking place and the American Society of Medical Technologists, I think, have approved this phasing out. I do not believe that the ASCP has acted on this yet.

Moderator: Where will a person be trained for lab work when they cannot or will not spend more than one year in training?

Dr. Knaff: I suppose if one is unable to spend more than a year they could be trained on the job as they have been in the past, and in the laboratory and trained at the aide level. There's a belief among some that eventually, what we consider now and I describe as the common termination of education being the high school, that in the future perhaps this will be two more years at the junior college level which will be the common termination.

Moderator: Won't all this lead to commercial schools' advantage?

Dr. Knaff: I can't particularly foresee that. Perhaps the commercial schools have something to offer and can talk and perhaps, even join in this program, if they are willing to meet the standards and guidelines that will be put forth.

Moderator: Dr. Burnett, would you like to have a comment?

Dr. Burnett: My concern about this is, I don't think you have answered my question, Doctor. What is going to happen to the people who cannot or will not spend more than one year in training for laboratory work? I've been in various places where they won't use anything but ASCPs, I hear this city or that city won't use it. The facts are very clear; if anyone will look outside of his own area, he'll find that probably the vast majority of small hospitals are being operated almost entirely by either CLA or commercial school graduates. The pathologists visit the hospital maybe once a week or less. My concern is: What is going to happen here? I don't know who is kidding who? At this point, I'm being very realistic.

Moderator: Perhaps Sister Rosarii, who has been directly involved in some of these discussions could answer this question.

Sister Rosarii: What is going to happen to the present CLA Program? It has been recommended and passed by the House of Delegates of the American Society of Medical Technologists, that the present CLA program be upgraded to a Certified Laboratory Technician program, utilizing the facilities of the junior colleges. This phasing out, we anticipate, will take 5 to 7 years. We do not recommend that this be done immediately de facto and everything closes up; but rather after a study has been done. We would ask all of the C.L.A. schools, how long it would take them to become affiliated with a junior college.

Does that help, Doctor? Now we are asking that the CLA program be upgraded to a CLT program. There are NOT enough medical technologists in the country and this is obvious. We need a supportive level. We, in Medical Technology, are convinced that this supportive level should be a junior college graduate who has adequate background to operate. We, at Little Company, have been running a CLA program for five years now. We have learned that the 1-year program is NOT sufficient. They must have much more background.

Therefore, we are not just eliminating these CLAs. If we would go into some type of a CLT program, these present CLAs are not just going to be tossed aside, but rather they will be included in this group of CLTs.

This has now been presented to the American Society of Clinical Pathologists and, as you know, the two societies work very closely together and they have not acted on this. We are now waiting for them to act. However, in the interim, Little Company has elected to go the route of Certified Laboratory Technicians.

Your question about commercial schools--I presume that you mean those schools that are operating because of some vested interest. I think the time has long passed when we can say, "You are commercial; we are professional, and we are not going to talk to you!" I think we have to talk to these people, and I think that we should give them an opportunity to join our ranks; to elevate their standards, so that they meet the requirements of the American Medical Association.

I do not see the commercial schools as a threat. As a matter of fact, I see them closing quite rapidly - at least in this area.

Moderator: Here is one question that really is quite bothersome. This question is not addressed to any particular person, so I am addressing it to the entire panel, especially to Mr. Belote and

Dr. Grede, and perhaps I can give my own comment. The question is: How can disadvantaged students be screened into programs in which core curricula are taught at a level well above their abilities in regard to their reading level ability, etc.?

While you two gentlemen are thinking about answers, let me give you this comment. Yesterday, I received a letter from a big university medical school in New York City (name unmentioned) from two Ph.D.s who wrote that they are concerned with our social strata at this time, and that they want me and others like me to take in one untrained and unskilled individual into the laboratory, for personal on-the-job training, for a period of two years. During this time I, as the individual, would of necessity give an extra hour a day. So that my affiliation wouldn't be losing money the Federal Government will pay up to $5,000 a year as a moderate salary for the training of this person.

Now this is a high salary for on-the-job training of a rather difficult group, especially when we have technicians and persons with different levels of education who, after four years of college, are not getting much above $5,000.

With this as a little bit of extra ammunition, would either of you gentlemen care to make a comment?

Dr. Grede: I think there is an assumption in the question that I wouldn't quite buy. The question, as I recall, was: "How do you get disadvantaged students into a program where the verbal part of the basic program is beyond their ability?" I would say this is an obvious mis-matching of an educational program with students, and you accomplish absolutely nothing with it. Our experience, and I hope Dr. Ferrago's, in the audience here, may correct me on this.

In September we started a program in allied health, basically with disadvantaged persons, although the age level there was considerably beyond that of a recent high school graduate. We started with about 78, in a basic core program and I think we ended up through the basic part of it with roughly 48, so there was considerable attrition which would indicate that we had not quite reached what we had hoped to. That is, to get the academic part of an aide type program geared to the level of the students who were interested in taking it and still able to meet the needs of the hospital and to provide that kind of verbal background, communication skills, and computational skills that were needed. I really think it is incumbent upon the community colleges. We have been struggling for five or six years in the urban based community colleges to develop the type of program which does start at the level of the students who come to us. As I say, I think we have been experimenting; we've had only moderate success and still it is a very serious problem for us. But I still think we have to do it; we have to try.

Mr. Belote: I would agree with Dr. Grede that the task, as presumed, is somewhat impossible. I'd like to simply relate this to what I was trying to say this morning; namely, that if we continue to be hung up on the notion that only those people who can complete an associate degree program have any functional purpose in this society, we will continue to find no place to work for the people about whom the question is concerned. I was specifically trying to get to the notion this morning, that we must find a concern among all of us in all areas of employment activity to involve a total spectrum of humanity in a collectivism of a total team approach in order that we can accomplish the purposes on which this nation was founded, including the economic premise of full employment.

Mr. Skaggs: I am representing the American Association of Junior Colleges here. One of the most significant of the concerns right now in the entire junior college field is, how the urban institutions particularly, but generally all institutions in our junior college field, can best serve all our population. That includes these students coming into us who are called "culturally disadvantaged", or whatever term you want to use. We recognize that many of these students will need help if they are going to compete on an equal basis with many other students coming in from high school graduation.

We also recognize and are very alert to the fact, that many of these students represent a resource for manpower in all occupational areas, including certainly the allied health and medical areas. We are now instituting programs in our junior colleges to take cognizance of our responsibility and obligations here. Sometimes these programs are called, as Dr. Grede just called them, the basic core programs; others are called Fundamental Studies. We have all kinds of terms for them, but there is considerable experimentation going on right now. Dr. Grede is perfectly right when he says that we have not yet achieved that instant success that we would like to achieve; we are experimenting; we are piloting.

Delta College, a junior college in Michigan, was one of the pioneers in this program, about five or six years ago. Just recently, in the last year or so, St. Petersburg Junior College, Dean Hartley's institution, sponsored a Florida program in which this was the main concern and the main issues involved. In the last few months, Dr. Belam R. Johnson of UCLA sponsored a conference of junior college people at Palo Alto, when three days were spent in discussing new ways of approaching education that would include the type of training and education needed by all people at all levels of students coming into junior college.

We have just instituted, under the direction of Dr. Dorothy Newell, in our own association, a very massive program for the disadvantaged student. This is directed mainly toward the urban institutions, but would include all junior colleges. This has received significant funding from the Office of Economic Opportunity, and from several of the foundations who are particularly interested. We have obtained for Dr. Newell a very fine staff and the program now is going forward with increasing rapidity. You'll be hearing more about it as publications come out from this program, and as pilot programs are identified throughout the country to help meet this particular problem.

In the junior colleges, at the present time, unless we have indications coming to us through our experimentation that we are wrong--and we don't think that we will--we feel (1) we have an obligation to serve the educational needs, educational motives, and objectives of all our population; and (2) that we have a tremendous untapped resourse of manpower in students who, by the old fashioned methods of selectivity, have been denied the opportunity to reach their potential. We are working on it and that is what I wanted to tell this group.

Lady's voice: Mr. Moderator, may I add two points to what has been said - about disadvantaged students?

Moderator: Yes!

Lady's voice: Point No. 1 - Students who are disadvantaged are not really any kind of stereotype. They are not disadvantaged in intellectual potential in the area or the level of the school for which they are being considered. There are some students with intelligence enough to undertake a Bachelor's program in most sophisticated universities, and that is where they ought to be, as that is an illustration.

Point No. 2 - Whatever the nature of the attributes that portray students' disadvantage - it must be worked on. Students cannot get through college unless they have a little tutoring in social amenities, as well as tutoring in mathematics, because they fall too far behind their colleagues, their peers in school. The additional point I want to make about that is that it is less a skewing of the curriculum at any level than it is a special adaptation of the student in it. For example: the requirements for graduation are met in universities of integrity though so-called disadvantaged students may take five years to make it, instead of four. If they fail in the course they should not be allowed to fail--they should be pulled out of the course and put back into it again. They take care and tending. In my judgment it needs to be done at every level of our educational institutions, not just our junior colleges. It needs to be done within the educational framework rather than on the job.

Moderator: Miss Hartley, is the premise, that the employing health agency has a primary responsibility for teaching the job function for a paramedical program graduate, any more or less valid than the notion that a high school should have a primary responsibility for providing a new teacher with the job function aspects of teaching?

Miss Hartley: I'm not quite sure I get the full impact of the question.

Moderator: Do you want time to think about that? I'll go on to somebody else.

Dr. Frahm, here are several questions which have been asked by several people. I can read them all and you can take them in rather short answers, rather than long questions.

1. Has a calculated minimum training period for cardio-pulmonary technicians been decided upon?
2. What prerequisites do you feel are needed for a person sharing this program?
3. What is the length of the training program for cardio-pulmonary technicians?

Dr. Frahm: Our own training program is one year in length. I am not sure that the minimal standards have been set by the Association of Cardio-pulmonary technicians at the present time. I think it will probably be for a year or two. My own opinion, from my experience during the past 5 years, is that we can train a technician to be technically proficient in a matter of six months.

Moderator: What is the futuristic outlook for the demand for these paramedical personnel? And to re-phrase,--what is the employment market for such technicians?

Dr. Frahm: I think the answer to the second question--the demand is growing more and more as these specialized procedures become adapted to community hospitals. I don't know what the full market really is.

Moderator: Will the field be limited due to the specialized hospital based Cardiacpulmonary unit? Can you envision it being outside of the hospital?

Dr. Frahm: No, it is primarily hospital based.

I just wanted to make one comment, in reference to the so-called underprivileged person. A chemist who works in our laboratory, at the present time, is involved in a rather interesting program with one of the gangs here in Chicago. He is considered a genius by members of the gang, because he is a chemist. What he is doing at the present time is, trying to take two of these gang members and begin formal communication with them so that they can begin to communicate with society in general. This is his primary problem. This is something that has amazed me to no end. Some of these kids are completely alienated and have absolutely no identity with what's going on in the main stream of society. Many of them have very decent intelligence and can participate in many activities but their main problem is that they have become disoriented and lost identity. This is a very important point to make.

Moderator: Dr. Grede, I have several questions that we can put together.

1. In the allied health program when students are in the hospital who pays the hospital personnel involved? The hospital or the college?

2. Do the students receive any salary from the "Cooperating" agency?

Dr. Grede: The first question concerns something that bothered us for some time and we have finally worked out an arrangement. Actually, the whole allied health program is virtually underwritten under the Vocational Education Act of 1963. Normally we are in a kind of subcontractual relationship with the hospital. What has been done is that the junior college, in effect, underwrites the total program, yet we get reimbursed from the State of Illinois for roughly 50% of the instructional costs of the hospital portion of the program which in turn is remitted to the hospital en masse, so the hospital continues to pay the full salary of the individual; the junior college does not pay the salaries directly, but we are in an approved subcontractual relationship which takes care of that part of it.

Now for the basic portion, of course, we are talking about our own college instructors who are paid from the regular college payroll, but even that part of it is partially underwritten by the vocational education act and we get reimbursement on that part also.

Moderator: Dr. Massler, what steps are dental schools taking to educate dentists to the use of assistants and hygienists? Employment figures would indicate that only a minority of those in practice are making full use of such personnel.

Dr. Massler: The assumption is not correct. All dental schools teach the use of dental assistants as part of the education of the young dentist. The block towards the expansion of dental assistants in dental practice is the lack of personnel. We don't have enough dental assistants and certainly not enough dental hygienists. Let me give you some figures:

The United States has 110,000 practicing dentists--7,000 are in the State of Illinois and 6,000 of the 7,000 are in the greater Chicago area. 85% have two chairs and one dental assistant; they would like to have two dental assistants but there is no place to get them. On-the-job training is now very difficult because the fall-off rate in these young people is rather high.

The national average is one dental assistant to ten dentists. The State of Illinois ranks 14th with one to sixteen. Even this is a misleading figure because most of these are part-time workers who have families.

There is only one formal educational program for dental technologists in the entire State of Illinois. There is an excellent program downstate, not nearly enough to meet the demand. Most of the dental technologists go to commercial laboratories. I would say that by 1972, we will need approximately 6,000 more dental assistants.

Let me wind up with one more point, please. If you have the so-called disadvantaged people that you can't use, please send them to us! How much college does a young man need to become a good Dental Laboratory Technician? Many of these people have an innate intelligence and an innate skill which we'd rather have than a Grade A in a formal course in anatomy or mathematics.

When it comes to the dental assistant I would rather have a human, personable, interested person than the top level student that comes out of a college with an A average who is a miserable character.

Moderator: Thank you very much! Miss Hartley, have you had a chance to consider your question?

Miss Hartley: Yes, and having had the opportunity to read this over, the reason I was confused is that in the question it states that the employing health agency has a PRIMARY responsibility for teaching the job function. If I gave that impression, I am wrong. They don't have a primary responsibility, because these students, in two years in health fields, have principles involved. Let's say, a particular procedure needs to be done. They are in the health agencies; they have done many of them. Now they cannot do every one. You cannot possibly educate people for everything that is required in each job with the tremendous technological changes that are occurring every day.

For instance, the students understand the principles of asepsis; they know what a tube is; they know it must be lubricated; they know the anatomy and physiology; they have been taught problem solving; they know how to make judgment; and they hope that the person in the agency will be kind enough when they say: "This is the first time I have done this particular procedure, would you be kind enough to go with me?" I think the agencies have a responsibility to not turn around and say, "Boy! are you dumb! What kind of program did you come out of?" It has taken us in nursing ten years to be able to say, "I don't know everything." I think this is indicative of the kinds of students coming out of the junior college today. They are not afraid to say when they do not know. It is more unsafe for patients, when we assume we know something, and we do not. These students have been taught how to think and solve problems.

They will go into the job with the basic skills; they will not know every single procedure for your agency; you have a responsibility to teach them uniquenesses, and how they function in your setting. I say that the agencies need to spend more time doing this - more time in having new employees feel they are welcome - than they have in saying: "You don't fit into our setting." As soon as we can get over this kind of thinking in all of the health fields, we will be able to utilize the new personnel much better.

Moderator: Dr. Howard, would you not consider a mature female, single and committed to the corpsman training program in a full time career working program for the physician assistant employee relationship? Remember, the theme of the regional symposium is, "New Concepts of Health Education."

Dr. Howard: Is that what they call "loaded"?

Moderator: Would you, or would you not accept a woman for the program?

Dr. Howard: We would accept women. This year in going through our applications of the 600, we had two that were vaguely qualified, none of them highly qualified.

Moderator: Then sex is not a problem?

Dr. Howard: Sex is definitely not a problem. I wanted a woman.

Moderator: How many Physician Assistants have been trained at Duke University?

Dr. Howard: Three graduated last year; one part-time student graduated in May; there will be four more in July, and in September.

Moderator: Where were they employed after the training?

Dr. Howard: The four that have thus far completed their training are all at Duke; two others - or four others - that are going to be graduated will be employed outside of Duke.

Moderator: Short answers please. What has been the acceptance of Physician Assistants by private patients and by the physicians?

Dr. Howard: Excellent!

Moderator: When the Physician Assistant is through training, has there been any problems of rivalry between nurses and the assistant?

Dr. Howard: Very little.

Moderator: What are the P.A.'s paid?

Dr. Howard: The starting salary at Duke University is $8,000; we anticipate on the outside it will be about $10,000.

Moderator: Don't you think that in practice the P.A.'s will, indeed, diagnose, as they develop in their working relationships with the M.D.'s? Frankly, it would be a waste if they didn't.

Dr. Howard: I am going out on a limb! I have to make more than just a very short answer on this. I think, yes! They are going to end up making some sort of diagnosis. Not diagnosis of a disease per se, but in screening and determining what sort of problems should be seen by a physician, and which can be handled otherwise. I think this is the same sort of thing that calls in the bartender and the neighbor lady, you know.

Moderator: Those of you who are interested--there have been a series of articles in the New England Journal of Medicine about the Feldsher, the typical Russian medical assistant, who did this. This is nothing new. This is one thing that the Russians can claim they did years ago, at the end of the 19th century. They have medical assistants which would be the equivalent of our First Aid Corpsmen where they are working on that basis.

Dr. Howard: But the difference here is, the Physician Assistant is working under the direct supervision of a physician.

Moderator: Do P.A.'s make routine hospital visits for the physician?

Dr. Howard: They make the rounds with the physician.

Moderator: Should a Physician's Assistant decide to become a licensed physician in North Carolina, how much credit is given from the education and/or training as a Physician's Assistant toward the education as a physician?

Dr. Howard: At the time, none. After they get their Bachelor's degree (after we get it converted to a degree program) we hope this can count for their premedical work.

Moderator: Dr. Mullane, if nursing does become an integral part of the educational system, do you support a mandatory hospital-community internship for nursing graduates before they can be turned loose as R.N. equivalent "Real Nurse?"

Dr. Mullane: I don't know what the question is. If the question is: Do I approve of an internship for nurses, post-R.N.? the answer is: Not in our present system. If the person who asked the question would like to ask me privately to enlarge on the rationale underlying my answer, I'd be pleased to do so.

Moderator: Dr. Knaff, is it correct that a student in a 2-year CLA program will or can, in the clinical phase of training, produce approximately three times as much useful pre-service work for the hospital and laboratory as a student in a 1-year CLA program? To what extent has this influenced the current move by the American Society of Clinical Pathologists to expand the 1-year CLA program to 2 years?

Dr. Knaff: No, I don't think so. The first year, don't forget, will be devoted to the core curriculum which is mainly didactic instruction, so that the practical, clinical experience will not be really increased over what it is now.

Moderator: Miss Hartley, how does the function of the mental health technician differ from that of the occupational therapy assistant?

Miss Hartley: If I understand Miss Atty's program as she has it set up, the role of the mental health technician is one in which she deals with the patient from the point of view of interpersonal relationships, and more of a therapeutic relationship; not necessarily the utilization of things, such as might be described and actually prescribed by a physician as the occupational therapist has. The occupational therapists primarily deal with physical disabilities where this particular technician, as I understand him or her, will be dealing with the mental aspect. They will be dealing also with interviewing in the care agencies, and the mental health clinics, where occupational therapists are not in the mental health clinic from the point of view of working with patients with crafts and arts. With the technician, it will be used merely as an entree to get into therapeutic relationship.

Moderator: Can you anticipate well-trained registered inhalation therapists being upgraded to cardiopulmonary technicians?

Dr. Frahm: In our particular pulmonary unit we are employing inhalation therapists a little bit separately at the present time, but I think that the two disciplines can converge, and I would think that there wouldn't be a major difference between the two.

Moderator: Dr. Grede, do your trainees for the allied health program receive any counseling, or ability and interest evaluation? Do you offer remedial work during the initial phase of your program?

Dr. Grede: There is a counseling program that is built into the allied health program. We have a full time vocational counselor who works with these students and is currently doing some research simultaneously to determine if we can't develop some kinds of job equivalencies, to give some of these people some credit for previous experience. We have a feeling that even with this very basic core, perhaps some of this can be telescoped and we can move them into the clinical portion much more rapidly. What was the second part of the question?

Moderator: Do you offer remedial work during the initial phase of the program?

Dr. Grede: I'm not sure what is meant by "remedial" to a basic program. If we are talking about the basic or didactic or academic portion, the pre-clinical portion, our problem has been to adapt this to the ability level of the students who have come to us and who, to a degree, we have sought out. So there is no provision to the best of my knowledge at this time, for extra work or for additional time for the individual to spend. It is done as a group operation. I doubt if we even considered the thought of a remedial to a basic type program. We are really operating at a basic verbal level here, below which it would be a little difficult to go, at this point.

Mr. Belote: It was my understanding that this particular program in the allied health group that Dr. Grede was talking about is really what many people would describe as remedial level instruction in the first place. Am I right or wrong? Of course, it is again a question of semantics. We use the term "remedial" generally in a junior college program, to talk about a level of ability, usually verbal or numerical ability, which can be upgraded to a conventional collegiate type program. When we talk about "basic" we are talking about something that is really a kind of curriculum in itself. It is not in any way related to a regular collegiate type program as we have known it historically.

So, if you want to place this thing in terms of levels, "remedial" is up here; and the "basic" is at this point. So when you talk about a remedial program to a basic program, I'm not sure I understand the import of it.

Moderator: Dr. Massler, will there be a strengthened emphasis on radiation effects and proper use and protection conscious attitudes with the use of X-Ray equipment, included in the allied dental health programs? In other words, this question is asked with respect to the recent radiation scare.

Dr. Massler: We have taken all sorts of precautions to avoid radiation hazards; naturally some lag a little bit behind.

By the way, I misinterpreted the previous question which was really asked: How do we get the old horse-and-buggy dentists to recognize the need for dental assistants? I think that was the intent of the question. The answer is, we have been brainwashing them for about ten years, and they are looking for help.

Moderator: Well he is doing pretty well! We have been doing some brainwashing for longer than that, and they haven't gotten through. I have one question that is really loaded. It is addressed to Dr. Frahm, but I will expand it to make it for the entire panel and perhaps this one would be a free-for-all from the audience. What, if any, consideration has your hospital given to the law and the nurse and these extended functions of interpreting arhythmias, et cetera?

May I paraphrase that a little bit for the entire group as a whole? This question of legality, which we have in front of us now, with our present level of nurses and with laboratory technicians who inject blood; what is the definition of injection of blood? Is it injection of blood if you add a bottle of blood to a vein that has already been used for an intravenous infusion? What about the diagnostics such as I 131, and so on?

So I think this law application is more than that and I'm broadening it to bring this up. Because that problem has not been decided, even by the various state agencies, at the present time for our present level, and if we go to these aids in the general sense, we may have a bigger problem. Would you want to start that please?

Dr. Frahm: I think it is a fantastic problem and a lot more discussion has to take place before these can be resolved. Go back five years ago and consider the problems of closed cardiac massage. I think it is generally accepted throughout the United States now that nurses can do this without much legal difficulty. I am absolutely not conversant with the legality of nurses' interpreting arrhythmias and acting during these very critical times. We have pushed ahead in this field and we would look for legal counsel in the regard.

But there comes a point in the community hospital and even in some of the major centers, where the action has to be taken within a short period of time or the life is lost. I think this is a very, very difficult question to give an absolute answer to. I would seek counsel from those who have more legal experience. In our own unit, if we have complete confidence in the interpretation of certain arrhythmias, as performed by nurses, we are not reticent to have therapy started before we get to the bedside.

Moderator: Are those nurses willing to take that responsibility? Many nurses refuse to give injections because they quote the law.

Dr. Frahm: I think many nurses refuse to do a lot of things that they are capable of performing, but we have broken down many of these barriers.

I would like to hear Dean Mullane's comments on this particular area. I think it is new; it is open; it is very exciting; and again, I think this is one of the things that allows the nurse in the cardiovascular intensive care unit to be a prima donna. I don't use that in a flippant sense. This is a very important area for keeping people excited about their work.

Moderator: Dr. Mullane, would you add to that?

Dr. Mullane: I don't know whether I can answer it, Mr. Moderator, but I hope I can make some relevant comments about it. In the experience of all of us, I think we would have to admit that practice is almost always in advance of the law. I am a graduate of the Class of 1931, when taking blood pressure was the practice of medicine, and excluded from the tasks of nurses. We have come a long way since 1931. I think we have to take our courage in our hands and realize that our practice for patient care has got to be in front of the law. I am less concerned about the malpractice suits; anyone who risks practice risks malpractice. There is a question of competent judgment, of all the legal principles that I need not go into. I think where we are culpable is that hospital by hospital we do not have physicians and nurses exploring together the hazards, the risks, and the procedures. I think doing this is long overdue in all hospitals, and certainly in our most sophisticated ones.

Moderator: You mean a physician-nurse liaison committee, and so on.

Dr. Mullane: Indeed! I go so far as to suggest that on every single committee in which policies are made governing patient care, not utilization committees that are especially medical, but on every single committee of the medical staff that deals with patient care, with policy setting, with procedure change, and so on, there should be a professional nurse at the head nurse, or above, level, sitting as a regular member of that committee and then these issues can be resolved before the conflicts.

Moderator: Dr. Howard! Will you care to comment about the Physician's Assistant?

Dr. Howard: We anticipate no problem at this time, and thus far have had none. The problem of the utilization of the physician assistant in the hospital has been brought up and appears as though it might be a problem. We are hoping in a legal symposium that a group of physicians and lawyers will work out all these problems which I mentioned earlier. (We had one meeting of the legal symposium in March, one in April and another will be coming up in September.)

From the audience: The whole thing on the legality resolves itself to this, and until we have a test case--that literally it is the physician's responsibility and if he delegates this to the assistant he is still assuming the responsibility. The higher up in the level of competency one is--for instance, the physician--they bear the prime responsibility of this and also the governing board of the hospital. This whole thing probably will not be resolved until a test case comes up. The recent Darling Case points this out very well. So you will resolve nothing, I think, in the whole symposium--I don't know!

Moderator: No, I don't think we can resolve it here. I think the problem is, however, that you have different legal advice for every different hospital. A lawyer is going to protect his client - the hospital - so, he will always err on the conservative side.

Recent Legislation in Medical Education*

Congressman Edward J. Derwinski

The subject that I was given is, "Recent Legislation in Medical Education." But, we in Washington have been passing laws so rapidly that I thought the subject would take hours. Also, we in Congress aren't quite sure what the bureaucrats do with regulations after we pass a law, and in turn you don't know what the bureaucrats mean when you read their regulations. So I thought it would be a bit more practical if I discussed a subject that had to do with dollars and cents.

Thus, I prefer to discuss and hope to make the point that we need additional funds for all phases of medical education, from training for the simplest technical skills to doctors produced by medical schools. It is obvious that the need for funds will grow, as we note our growing population, and the demand for services from the public, which expects much more today than they did 20 or 40 years ago, will increase. The medical profession as a whole will have to provide the facilities, the personnel, and everything needed to keep up with this growing demand. It is also obvious that funds cannot be produced from any single source. The Federal Government cannot do it all; state governments are greatly handicapped; and there is a limit to the number of individuals who leave their fortunes to hospitals or charitable institutions.

What we have, of course, is a financial partnership involving the Federal Government, the State Government and individual contributors, who continue to provide additional funds for the expanded medical and educational facilities that we need.

From the experience I have had at the Federal legislative level, I would caution you not to expect an endless flow of funds from the Federal Government. Right at the moment we are going through a budget crisis, and no one knows at this moment what areas of Federal funding will be affected by necessary economies.

As I have looked over your program I see that you have touched on such unique subjects as the education of dental assistants, the relationship of junior colleges to your educational needs, nurses training, mental health technicians, and other topics. Whatever your individual background is, I imagine you could make a very strong case for priority that should be given to your speciality, your participation in medical education or medical service. Regardless of what your individual contribution is, you believe it is a major element in hospital or medical service. This is a human feeling and you should feel this way.

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*Banquet meeting on Thursday evening, June 6.

While I realize that you are very properly dedicated and thus directly involved in programs to expand all phases of medical education I would ask you to detach yourself for a moment from your immediate imvolvement as I relate an experience which I encountered a month ago. May I preface my remarks by pointing out that this was not an unusual experience.

In one evening I was scheduled to make three appearances. The first was at a dinner, sponsored by a high school PTA, in which the questions and the information they wanted from me dealt with the subject of how much more money they would receive from Federal aid to education programs for the high schools in their district.

After I explained to them what they might or might not receive, I left the PTA to attend an American Legion meeting, where the Legionnairs wanted to know: "What new educational programs, pensions or benefits will be developed for our veterans?" They even asked, "How about a bonus for all remaining World War I Veterans?"

I, of course, explained to the veterans what we have done for them; what programs we might augment, but also where we would have to stop due to financial limitations.

My last stop that evening was at an Izaak Walton League meeting. There the boys were interested in such things as cleaning up Lake Michigan, and even more specifically, "What about the Kankakee River? When are we going to be able to fish for trout in the Kankakee River?"

If I were dealing with a typical family that evening, the chances are that Mother was at the PTA meeting; Father was the American Legion Commander; and Johnnie was the avid sportsman who was at the Izaak Walton League. And the Federal Government was the answer to all their problems.

If we met all the financial demands of the high schools across the country, we could not provide for the veterans or conservationists. Or, if we met the demands of all the veterans, we obviously would lack funds to clean up Lake Michigan. And if we installed a crash program to clean up the Great Lakes and the Kankakee River and all other bodies of water that are polluted, we would not have sufficient funds for veterans, nor for high schools, nor for other worthy projects.

What happens is that all groups actually compete for funds and this is the problem that we face in financing the Federal share of medical education. You must compete with veterans, with the Izaak Walton Leagues, with high schools, with the road builders -- with many other legitimate groups.

There is an obvious limitation in what Government will be able to do. Therefore as a practical precaution I would suggest to those of you who are in the administrative end of any medical education facility not to over-rely on Uncle Sam. Despite the good intentions, dispite the promises inherent in many Federal programs, we are not going to have all the dollars that are being requested for programs across the country. Rather than to give anyone a false promise, I would much rather you have a realistic understanding of the Federal Government's limitations.

By the way, if you would have someone representing the State Budgetary Commission speak to you, they would tell you the fiscal problems facing the State of Illinois. One of the situations they face is that having embarked on a crash program to develop a junior college system, they find that it is not being done without sacrifices in other fields. So you have a competitive problem there also.

May I also observe that when you look at your possible financial sources, there well may be at the Federal level an assault on some of the private funds that are contributed or invested in hospitals and medical schools. For example, one of the bills pending in Washington would tax the revenue of advertising in medical journals. I would imagine that this would create a dent in the AMA budget, or that of other groups associated with you, yet there is a tax loophole involved. Rather than receiving additional government support, you may find the Federal Government imposing a new restriction or tax load on an area that heretofore had been relatively free from taxation. If the budgetary situation gets even farther out of hand, one of the victims could be the Hill- Burton Program, which has been safe from deep cuts for years, but you cannot count on it completely if you are interested in expanding and think Hill-Burton is going to be your major base.

Another observation we should make is to recognize the growing demands of the public which have put such a great burden on all phases of education in your field -- you cannot produce nurses fast enough; you cannot produce technicians fast enough; and obviously, you are not producing doctors fast enough. These shortages create an abnormal personnel problem that adds to your costs. Other public complaints are the costs of medicines, hospital service, doctor care and related items. Part of the reason for the jump in medical costs is the shortage of personnel. So you are caught in what is almost a vicious cycle. Yet the Federal Government does not have the financial means to provide all the solutions.

As a matter of fact, we have probably compounded your problems by having passed well-intended programs before there are trained personnel to implement them. This really is at the core of the confusion over Medicare. A wonderful concept, but no one stopped to think of all the additional facilities and work that would be necessitated by the program. So the program was approved without thought of where the personnel would come from to meet the problems that the program was addressed to. By the way, in many other fields this has also been the Federal approach -- the bureaucrats devise a wonderful solution on paper -- and along the way we find that we have neither the technicians nor the brick and mortar with which to solve the problem.

I would think perhaps that one answer to the problem might be to re-structure the National Defense Education Act, and within it provide priority for medical education.

You may recall that back in 1957, we as a nation were greatly embarrassed when the Russians launched the Sputnik before we had placed anything in orbit. One of the cries that went up at the time was that American education had failed us. We were not producing scientists; we were not producing the skilled technicians to match this Sputnik feat of the Russians according to the instant critics.

So immediately a crash program developed, called the National Defense Education Act, thru which federal funds were poured primarily into science courses and languages.

The program was reasonably successful. We have far surpassed the Russians in space competition. But it is not really a direct result of the National Defense Education Act. We had the potential and the ability all along, but we had not designated priorities as the Russians did. But the point is that we faced a national demand to win in the competition and a program was designed that has worked fairly well. In the past ten years the National Defense Education Act has been one of the better programs produced in Washington.

The United States Olympic Team was completely trounced at the Olympic competition in Rome in 1960. Immediately our educators were told that they had let us down again. Three years before they had let us down in the fields of science and languages, now they had let us down in physical education. Americans were too soft; the American boy wasn't the rugged son of the pioneer that he used to be. There was a huge cry about the need to expand physical education facilities to avert a national disaster. But by 1964 there was a serious attitude exhibited by the American Olympic team and our boys beat the Russians in competition.

Since then no one has accused the universities and high schools of allowing a complete collapse in the field of physical education. However, we were almost at the point early in 1961 where pressure inspired by emotionalism may have produced a massive federally financed physical education program. I do not think this kind of program was necessary then, nor do I think it is necessary now, regardless of how our amateurs do in competition with the Russian professionals in Mexico City a few months from now.

One other example that illustrates the financial limitations of the Federal Government: Many of our citizens believe that one of the greatest crises facing our government is the deterioration of service being rendered by the Post Office Department. An Air Mail letter from Chicago to Los Angeles may take four days to deliver. If one of our local doctors, let us say from Chicago Heights, mails a statement to a patient in Harvey, it may take three or four days before the letter arrives.

A few months ago someone suggested that we should solve the mess in the Post Office Department, not by a crash effort of the Federal Government to build more post offices, but by turning the Department over to private enterprise. Perhaps private enterprise would deliver mail in a more effective manner.

Of course, this would be a shocking admission that Government could not do everything for us. It is doubtful that Washington would take the necessary step of disposing of the Post Office Department, which, in fact, does deliver mail very inefficiently, and also operates at a loss of over a billion dollars a year. Now I would like to think that if we turned the Post Office Department over to A.T. & T., for instance, they could develop a mail delivery system that would even show a profit. Then the billion-odd dollars that the Post Office loses could be put into medical education. A perfect solution--or at least a simple solution.

But naturally, about that time again we would have the Izaak Walton Leagues, the PTA's, American Legion and other groups pleading for their slice of these funds. So I cannot be optimistic recognizing that the competition for federal funds to which I have been referring will continue.

May I re-emphasize that the public is disturbed by both personal experiences and the stories that the press has carried relative to the lack of effective or available medical services.

Perhaps the public is demanding too much of the medical profession. We have excellent medical service, in comparison to other countries but the demand from our public surpasses those of other countries. In fact, we have reached the point where we take our excellent medical services for granted. We take the facilities of our new hospitals and clinics and all related services for granted. We obviously have a great deal more to do, but we must keep the whole picture in its proper perspective and remind the public that despite the need for hospitals, medical schools and skilled personnel involved in the very elaborate operation of the medical profession, that by and large, Americans do receive the world's finest medical service. There is obvious need for expansion; there is obvious need for investment of greater funds, but the situation requires our energy and determination and not unwarranted criticism.

If you will allow me to make a suggestion to medical authorities and especially doctors, it would be to take 30 seconds with each patient to explain their professional problems -- this would be good old-fashioned public relations and they would develop greater public understanding of the problems as they are faced.

Perhaps you wonder if you could actually get to the point where a proper priority could be given to substantial federal funding of the entire area of medical education. I am not going to mention state funding because most of our states are too strapped financially since the Federal Government has choked off the source of taxes and holds too much of the tax dollar.

Realistically, you cannot expect the Federal Government to be expanding programs, especially in proportion to the demand which has developed. You cannot expect the fulfillment of all the would-be committments. Certain committments and programs passed in the past few years may not be funded due to the limited Federal budget. You must realistically plan on this limited Federal budget, and to think otherwise is really to ignore the immediate facts of life.

But I could not emphasize enough the need to educate the public on the vast problems that you face. I do not think there is any other vital service in our country that is taken for granted as much as medical services. I do not think there is a profession in the country where the public has had fewer fundamental explanations given to them than in this field.

I wish that I could sound a much more optimistic note; I wish that I could have predicted a dozen glowing, wonderful, utopian Congressional programs, but that would have been false reporting at the moment.

Now, if you will permit me, I wish to go beyond my subject matter and comment on current events.

I would suggest that in the light of all the problems that face the country these days the one thing that we should not do is fall into some feeling of despondency over the future and the role that our country has in world affairs. You know there is a tendency among Americans to be self critical, and there is a tendency among Americans to think that the problems that we are struggling with are unique to us and that no one else in the world has them. We have intense domestic pressures in addition to the external pressures over Vietnam, we have domestic pressures over racial strife and now we face a financial crisis in government. Many people look at these problem areas and lose confidence in the future of this land of ours.

By nature I am an optimist. Without sweeping things under the rug I think that when you look at the problems that other nations face, we look good in comparison. For example, let's take a look at the complications we face in the racial field. We are struggling to solve them. I do not know that we have an immediate answer, but there is an interest, there is an effort, there is a slow but steady progress.

For example, the British may have solved their racial problems by not allowing any more colored immigrants into the country! This may solve their problem. But it is certainly not as meritorious or acceptable as the efforts we are making.

Regardless of what many well-intended unshaven college men may say, we are not the aggressors in Vietnam! We are helping the South Vietnamese people defend their freedom against brutal aggressors. It is the Communists and specifically the Soviet Union, who are the aggressors. We are hoping to halt aggression and spare the world from World War III.

Our position in Vietnam is consistent with our history and our national character. Our policy is not understood and it has not been properly explained by the Administration, but nevertheless, it is, as I see it, in keeping with the role that we have had thrust upon us to protect free people from totalitarian onslaught.

When we look at the financial crisis in government, the problem that we really face is that of living beyond our means. It would not be a bad idea if we all recognized that there is a limit to the capacity of government to play Santa Claus. We cannot increase the burden now being borne by the taxpayers of this country. Let us keep in mind that, "A government big enough to give you everything you want is a government big enough to take away everything you have."

It is necessary for us at this time to reaffirm a few sound historic American principles. One is that we seek no territory any place in the world. We want peace; we want freedom in the world. We sometimes may blunder and suffer from misdirection, but our intentions are good, we are not an imperialistic nation.

A second is that we have realistically faced our racial problems. Remember that we fought a civil war to end slavery, and slowly, but surely, through legislative enactments, court decisions and administrative policies, we have endeavored to overcome racial strife.

We require at this time a great deal of patience individually and within the total framework of our society and as I have pointed out we are handling our unusual racial complications as effectively as any government or people are coping with racial, religious or nationalistic tensions.

A third historic principle we should pause to recognize is the pioneer spirit and individual initiative that we evidence in the growth and development of our society and economic structure. Americans have demonstrated great ingenuity, tremendous pioneer spirit, and faith in the free enterprise institutions that have served so well. We have always recognized that government was subject to limitations and was a partner in, rather than a master of, our national destiny.

But we should feel that we live in a country that with its imperfections is still a little better than any other land.

Winston Churchill once said, "Democracy is a poor form of government -- but it is the only one that works."

I am also reminded of Stephen Decatur, one of our early national heroes, when he was honored for leading the first American struggle against tyranny abroad when he defeated the pirates in the Barbary Coast.

At a banquet in Boston honoring him, he proposed this toast: "My country! In its relations with foreign lands, may it always be right; but MY COUNTRY, right or wrong." There is merit in this philosophy even today. We recognize our problems, we recognize our defects, but we have legitimate faith, legitimate confidence and legitimate pride in the virtues our people possess and we will continue to build an even greater country.

Health Education Centers -

Community Junior College View

Kenneth G. Skaggs

I am to talk to you this morning about health education centers -- the development of health education centers. Let me tell you at the start: We are in a world of ideas this morning. I don't know of any kind of place that is like the one I'm going to present to you this morning. Today, we are on Cloud Nine, or are we on the space ship in the motion picture, 2001: A Space Odyssey?

I want to present to you an idea I presented several years ago. Sister Rosarii asked me to come and present it to you at this Symposium. I raised some objections; I had some pet speeches I wanted to make and thought this would be a good place to make one of them, but you don't argue with Sister Rosarii. She said, "No!" She wanted me to talk about the concept of the health education center - so we are going to talk about the concept of the health education center. It is a "way out" idea. I think something like this may be developing now in Baltimore through the cooperative situation between the Franklin Square Hospital and the Essex Community College; in Amarillo, Texas, where a tremendous health complex is being built - a hospital complex with an educational institution tied into it; in Minneapolis with St. Mary's Junior College and the St. Mary's Hospital complex; and in other places in this country. I think these are the beginnings of the concept I'm going to present to you.

Let us identify some of the issues and problems that we are facing that might lead us to the concept of the Health Education Center.

There are, right now, 963 junior colleges in the United States. When I made a speech in January, I told the audience there were 923, and now I've had to change that to 963. These are institutions which we heard about all day yesterday and are appropriate for the development of allied health programs. These institutions are appropriate as cooperating and coordinative institutions in working out plans to meet the problems and needs in manpower in health care. The very number of these colleges is a little startling. They involve, perhaps, thousands of faculty members, right now almost two million students, and by 1971 will involve three million students. We estimate that by that time at least half of these students will be in the occupational or career education areas; many of them in the allied health fields.

The continuing manpower needs will be determined by the population of this nation and by Medicare and Medicaid, which are offering more services to our people all the time. The fact that more people make use of the services offered in the health field increases manpower needs. Add to this the fact that by 1975, our population will fall into two major groups: the young and the old - the very two groups that are going to demand the most health care services. The great middle age group will be in the minority. Look at your census figures and you will find some startling facts. Yes, we have been told that the population explosion has slowed down; we are in a plateau. But don't be fooled! Plateaus, percentages, ratios sometimes can draw us astray in terms of actual numbers.

One percent of ten may be one figure; one percent of one million is considerably more. When you look at ratios; when you look at plateaus; when you look at percentages; don't be fooled. Somebody mentioned yesterday that the youngsters who came into this society at the beginning of the population explosion in 1948 are twenty years old this year. In another one, two, three, four, or five years they will start having their children, and personnel demands will again increase.

We won't reach the peak of the students coming into the institutions of higher education for another ten to twelve years. Go back and look again at your population graph. When did the population increase start? In 1948. That's when we see the line start up. But it did not reach its height until 1955-56-57. We are still a long way off from that yet. We are just on the beginning end of it. The 1948 children are now 20 years old and they already are in college - either a junior college, a university or a four-year college. These are the students you are recruiting into your programs, and this is just the beginning! You see what we have ahead of us. The older group, of course, is increasing because people are living longer, and are seeking medical services for this reason. This is another factor influencing personnel needs.

The number of Allied Health and Allied Medical Programs that are now being planned, developed, and implemented is another factor.

We have identified, at the present time, forty-two different allied health programs in the junior colleges. That is, there are forty-two different programs being given somewhere in junior colleges across the country. Many of these programs, such as the associate degree in nursing, dental hygiene, dental assisting, and others, are found in many institutions. There are others, however, that are offered only in a very few institutions, such as the prosthetics technician program described by Dr. Grede yesterday. Chicago City College is one of the few in the country giving this particular program.

Forty-two different programs in the junior colleges of the nation! The U.S. Department of Labor publications, Health Careers, with which all of you are familiar, lists over a hundred allied health and allied medical programs. These range all the way from those that could be given in secondary schools to those in vocational centers, technical institutes, community junior colleges, four-year colleges and universities.

These programs are in operation right now. They are being taught somewhere right now, involving thousands of students. But the amazing thing is the development of new programs, new careers. Programs you have never heard of, programs that have not yet been approached, will be on our planning boards in our educational institutions within a few years.

Now the problem is: How are we going to make the most effective use of all these programs? My proposition to you today is that our nation, our society, cannot afford the expensive and wasteful luxury of separate planning for the educational programs necessary in the work of tommorrow. There must be some new concepts, some new ideas, some new formation that will knit education together - provide a totally integrated whole and coordinate the program's plan into one comprehensive educational effort.

Education in our country today, as you know, is compartmentalized. There are elementary schools, junior high schools and senior high school. There are technical institutes, vocational centers, Community colleges, four-year colleges, and finally sitting like Jove above them all, on the top of Mount Olympus, are the universities. We are all compartmentalized; sometimes we don't even talk to each other! We don't really know what each other is doing. There's no integration among us or between us, in terms of programs.

We do not have any kind of a consistent admissions policy. A nurse goes to a diploma school in a hospital, which is a top school, and then tries to get a baccalaureate degree in a university and the door is slammed in her face.

A licensed practical nurse with promise and with great potential as a practical nurse, wants to go on for the associate degree and eligibility for the registry, and SLAM! You know the kind of thing I'm talking about.

I would submit to you this morning, especially in the allied health field, that we cannot afford this. The health education center could be the new concept. If we lead the way in the health fields, we will have broken the bonds of restrictive thinking in education, and educational opportunity for our people will become more than just a propagandizing catch word.

What would such a health education center do? Well, here's the opportunity, Ladies and Gentlemen, for stretching your creativeness to the fullest.

First, it can coordinate all programs for health education, from the high school with its few such training programs to the university and the graduate school. It can coordinate these programs closely with the vocational education center. It can relate higher level programs to those providing semi-professional and technician personnel in the allied health programs of the junior colleges. It can provide support and encouragement to those students able to proceed to university level programs.

Not only would the Health Education Center articulate, coordinate, and evaluate all such programs, but it would determine through its advisory council on the appropriateness of health programs to the level of education best organized to offer it.

Some programs would be assigned to high school and vocational center levels of skill and competency preparation. Some would be considered most appropriate to the junior college level with its more sophisticated curriculum and its college level emphasis. Some of the courses would be appropriate only to the university or the four-year college level.

Second, the health education center would provide strong and continuing means of communication among the professions, the educational community, and the public. It would provide public information. It would constantly provide services to counselling and guidance personnel on all levels, and would actively engage in proper and realistic recruitment of students. It would be a central clearing house for faculty, staff, and administrative personnel placement in the health field.

Third, the health education center would be a physical plant, large enough to be the extended campus for a number of institutions, and would provide the laboratories, classrooms, audio-visual equipment and materials, professional library, offices for faculty and staff, and the specialized and general equipment - teaching tools and supplies - for all the educational institutions in the area it would serve.

At one and the same time, it would be the extended campus of a high school, a vocational center, a community junior college, a university - all would contribute to it. All would draw from it. Why not? Aren't we in education just as you in the health professions purportedly the most reasonable, the most adaptable, the most forward-looking members of society?

High school students, college students, university graduates - all on the same campus? Why not? What is sacred any longer about age or level? Such a plan would represent a great community effort for meeting the most pressing, the most desperate, and at times, the most tragic of society's needs.

Next, the health education center would, more than any other kind of institution, provide a way to make the open-ended curriculum really possible in health education. Let me discuss this important concept in more detail. At the present time, as you well know, there is a long standing, built-in restrictiveness in educational programs, more visible perhaps in occupational programs than in some others. Our various levels of education and the institutions representing them have very little articulation of endeavor and effort. Let me give you an example:

A young person enters the practical nurse education program on the vocational level, and while receiving education there, discovers a growing and developing talent and motivation. Means can be found to proceed beyond the practical nurse level.

Can this be done now without sacrificing the time, money and learning already spent? Not in very many institutions or from very few levels or education. But let us think for just a moment! Why isn't it reasonable for this student to go directly into the associate degree nursing program on the junior college level WITHOUT penalty? Or from the associate degree program to the university baccalaureate degree program? We realize that several curriculum adjustments must be made, but shouldn't it be possible for this continuation of education to be realized for able and developing students? The ladder to progression in education should be possible.

We like to call this the open-ended curriculum. We believe it will aid immeasurably in removing the restrictiveness of educational programs that today frustrate and discourage students from entering occupational programs. Mobility in educational programs should be horizontal as well as vertical, with flexibility and adaptability as underlying principles.

How would health education centers be organized? What areas would they serve?

My own suggestion is that there could be centers for metropolitan areas, or regions, perhaps in relation to population, even a state center. However, one emphatic principle of education today is that geographic proximity of educational opportunity to centers of population is necessary, for no longer is there a student age limit on any level of education.

Education for this world of tomorrow morning is for all people. It is to serve the needs of people, not the ages of people. Therefore, it would seem reasonable that these centers would be developed and placed in as many locations as need and clusters of educational institutions dictate.

How would they be financed? There could be public financing on the same basis as any other educational institution, either through support now given to established institutions which would contribute a prorated cost, or directly through an already established educational board, or through a newly created board. Of course, special grants or foundation funds could play an important part in initial financing.

My idea of the health education center would be that it is just as much a part of public education as any institution that we now identify, and that it would be a part and parcel of the whole educational effort.

Finally, almost every objection of educational institutions for the extended campus idea of the health education center can be met on the grounds of reason, logic, necessity, and sound accomplishment.

Most objections will come from those who are more concerned about prestige and status and exact definitions of high school level, vocational level and collegiate level than they are with the demands and the needs of a new age, a new people and a new world.

The advisory council of the center would be made up of people from medical and health professions and agencies, representatives from the educational institutions that make up the center, and forward-looking laymen. The council would assume responsibility for proper and acceptable quality control of programs, and for preserving the administrative integrity of the education institutions involved.

Seeds for such an operation as I have described, perhaps not quite so broad in intent, and certainly not so broad in concept at the present time, have been started at the University of Minnesota Health Center, the Wichita (Kansas) Health Education Center, the University of Alabama Allied Health Center, and some other places.

I think that is we are simply going to multiply programs; if we are going to organize a program every time a need is seen; if each of us in education is going to go our own way down our own roads without articulation, without coordination, without cooperation with the other segments of education; if we are still going to focus attention upon this particular institution or that, we are not going to meet the needs of the future. Society as it is being formed now for the next few decades is going to reject much of what we are doing following the old patterns.

I think we are going to HAVE TO come together in education, to plan, to develop, to implement programs that will have common objectives and common goals.

I think we must pay more attention to the real needs of students as these needs can be translated into meeting the needs of society. I think we are going to have to do away with much of our snobbishness and compartmentalization in education. I think we are going to have to help each other more than we do now.

When we begin to plan programs, we must use common sources and resources of faculty, common recruitment resources, common materials. Much of what we are going to use physically, in the teaching of allied health programs of the future, is going to be tremendously expensive, and it ought to be -- if it is going to do the job that we intend it to do. Therefore, we are going to need to share much among our institutions and our educational centers.

The health education concept - bringing together all the levels of education; articulating and coordinating programs; providing for the extension and the upward movement of opportunity for students; providing for all the centralized library services, audio-visual aids, all of those devices that must be needed by education; and especially to provide an appropriate atmosphere in which students in allied health and medical education can move and work and begin to get that tremendous feeling for their own profession is the goal. It is a new idea! I don't know whether we will ever attain it, but in some places in this country right today we are, at least on the way.

Core Curriculum and Mobility

Robert E. Turner, Ed.D.

At the outset I'd like to make it quite clear that I'm no expert in paramedical education. You'll find that out sooner or later anyway. Therefore, I do not claim to tell you what should be the content of programs which are under discussion at this symposium. I do, however, have a strong feeling toward educational productivity, flexibility, and career mobility for all persons as they pursue their chosen occupations.

With this in mind, let us make certain assumptions, which if right, can lead us to establish certain guidelines for program development in the important facet of education known as paramedical.

1. There are certain basic concepts, ideas, ideals, and skills which are appropriate for all persons who live in a democracy and can make their just contributions to the social order of their daily lives.
2. There are certain commonalities in families of occupations which, when carefully identified, can be taught as a part of a curriculum which will be the same for all, or nearly all, of the specific occupations within that family.
3. There are certain elements of specific occupations within a family of occupations which clearly define that occupation and make it unique.
4. There are a number of ways that an individual can become proficient in a chosen occupation, not all of which require formal education or education according to any one prescribed curriculum.
5. A person continues to learn even though formal education is not pursued. At no time should an education be considered as terminal.

Now I'm sure that not all of us will agree on the specific concepts, ideas, ideals, and social skills which are necessary or even recommended for each of us. I believe, however, that most of us can agree that there are certain basic elements which should make up what is sometimes known as the general education core. It would be my recommendation that every responsible citizen should be aware of the world around him, share his responsibilities as a citizen, have an appreciation of our cultural heritage, and develop an ability to communicate with others.

I do not believe that it is necessary for all of us to be experts in all matters, but each of us needs to be aware of those things which make for enjoyable and fuller lives.

I further subscribe to the idea that we do not live in subject isolation. By this I mean that we do not live history one day and English the next. We do not isolate ourselves in physics for one week without any regard to the psychology of living together.

I have a feeling that some of us are better able to take these various elements and integrate them into an order while others may see little continuity when each subject is taken separately. This leads me to believe that, especially in the general education core of any program, consideration should be given to providing carefully identified objectives in terms of behavioral changes; and by a team approach, teach those elements in a manner which will be practical, realistic, and of value to the student.

Proposed Curriculum Planning Guide

General Education Core

Psychology	2 credit hours
Communications	6 credit hours
Social Science	6 credit hours
Humanities	3 credit hours
*Natural Science	8 credit hours
Physical Education	1 credit hour
	26 credit hours

*Student to select two of the following:
Natural Science (Physics and Chemistry)
Natural Science (Earth Sciences)
Natural Science (Biology and Zoology)
Natural Science (Anatomy and Physiology)

Basic Health Core

**Natural Science (Physics and/or Microbiology)	8 credit hours
Chemistry	4 credit hours
Mathematics	3 credit hours
Psychology	3 credit hours
	18 credit hours

**May be taken in lieu of Natural Science requirements of General Education Core.

Specific Courses 16 - 25 credit hours

Courses to be designed commensurate with the uniqueness of the program. Extensive consultation with advisory committees to determine content.

It will be noted that Communication is a part of the general education core. This need not necessarily be "English 101," but the course should be based upon certain carefully defined objectives and the course(s) built around the objectives. Communications course(s) are important and may even be integrated with other areas of instruction within the core. Other elements of the general education core should be self-explanatory.

Next comes the technical core of offerings. Within any family of occupations there are certain common elements which are necessary for success. For the health sciences there must be a knowledge of anatomy and physiology. There is need for biology and chemistry. The problem here is how much and what kind. You just can't say: "You need Biology."

Somebody needs to identify the minimum requirements, or what are the practical requirements of this aspect. As an institution attempts to develop programs it is well to obtain the advice of the experts in the field. By identifying a number of related occupations it is possible to ascertain the common elements and thereby develop appropriate courses to teach these elements. The important thing is to identify the elements.

It is much better to develop courses which provide the necessary knowledge required than it is to have existing courses and to try to fit them into a pattern which may be labeled as some specific program.

I think one of the problems that we have run into is, and this certainly has happened in the four year institutions, that we had a course in English and we had a course in math. My plea here is to carefully identify the necessary information which should be imparted to the student which is similar for other occupations within a whole family of occupations.

In every occupation, there are those elements which make it unique. Here is where in our planning we identify those elements that make one occupation different from another occupation. When we put together the general education core, the occupational or technical core and the specific, we have a program! Satisfactory completion of this program then prepares an individual for employment and provides for horizontal as well as vertical movement.

Now I would like to emphasize something that was emphasized yesterday. This kind of program can be great for the disadvantaged. I don't know what you're talking about on "disadvantage." Maybe you're talking about social disadvantage. Maybe educational disadvantage. It is entirely possible that not everybody will be taking the same English class. Not everybody will be taking the same natural science class. But there will be those people that have aspirations to go on. You're not closing the door on them, but within a core of units you have met certain basic requirements, or minimum requirements.

Now then, the important thing here is the objectives. There must be carefully designed objectives. These objectives should be prepared so they can be measured or evaluated, and this is where we fall down too often. All of us can make objectives, and they can be high-falutin and philosophical sounding, but there are very few of us who have done the real job of breaking these objectives down so they can be measured. If these objectives are realistic to the point of adequately preparing an individual for employment, then we have a package which is acceptable to the health care profession.

At no time should education be considered terminal. There should be continuous opportunity for in-service training and opportunities for advancements through additional education and evidence of performance. We continue to talk about baccalaureate and higher degrees. These are important to many people and certainly are important to the profession; but let us not say that someone who has attained a certain level through a specific training program cannot use that knowledge to pursue additional training. In other words, maybe it behooves those of us in community colleges to fill in some of the holes in case somebody is not actually able to go on to a higher level of education.

Until now four-year institutions have generally equated course for course as students make their transfer from one institution to another. Little has been done by four-year institutions to accept packages such as the Associate Degree and to take the student from where he is to where he is expected to be.

My recommendation is that at least some of our four-year institutions should consider providing advanced training for some of the more capable students who have attained their Associate Degree - with the attainment of the appropriate objectives.

Institutions accept the Baccalaureate Degree package for students who want to pursue their Master's. Why cannot the Associate be bought as a step toward the Baccalaureate? Upon the recommendation of the sending institution the accepting institution could be somewhat relieved of full responsibility for the student and the integrity of the sending institution could be maintained. I am simply saying this: Clearly identify your objectives. Be able to measure your objectives, and the four year institution should care LESS how it's put together! If you want to teach English with history - what difference does it make if the objectives are realistic and if they have been attained? This would break down some of the barriers to trying to equate course for course.

Most of you here had an idea that when you entered college, you were going to get your degree, and you went "hell bent for election" right toward it! And you got it. But remember, this old world is made up of people who weren't as motivated as you; maybe not quite as intelligent as you, and they didn't really see an ultimate goal. They moved along the way but they didn't have organized plateaus that they could reach; instead, they had doors closed to them.

In this time when we are trying to improve the status of many segments of our society, let us reassess the educational opportunities and set about rethinking our post-secondary offerings. Let us break down the barriers which have grown over years of accumulation and undirected growth - maybe even misdirected growth.

You here at the Symposium can establish the direction and set the pace for realistic paramedical programs on a nationwide basis. Your recommendations will have a great impact as we attempt to supply personnel for a vitally important growing area of service to mankind.

At the present it would appear that no matter what we do there will never be sufficient trained manpower to meet our demands. Perhaps consideration should be given to taking a lesson from industry and carefully analyzing activities within the medical professions. This analysis would perhaps show that some of the present professional activities could just as well be done by those with less training. At least with a different type of training.

All of this requires rethinking requirements of the medical professions, and certainly will have great impact upon certification requirements. Barriers between associations and agencies must be broken down, and there must be a considerable amount of communication and innovative thought given to this task ahead of us.

We, in the junior and community colleges stand ready to provide the education and training of the paraprofessional and the technical worker in the health related occupations. But we MUST look to you for guidance in the development of realistic programs. You can assist us to assist you to assist others in the prevention and care of those with the heart disease, the cancer, the stroke, or other diseases. We have begun to form the Team. Perhaps you have done a pretty good job of whipping it into shape - even at least the first string! Maybe we should get together our substitutes; our water boys, our trainers, and others, to make that team work. There are a number of jobs that need to be done.

Role of American Medical Association in Paramedical Education

C. H. William Ruhe, M.D.

I approach the podium with some temerity, being interposed between two dynamic speakers and the coffee break; however, Sister Rosarii wanted me to talk about the American Medical Association's role in paramedical education, so that's what I'm prepared to talk about.

I believe, first of all, that many of you know a good bit about the AMA - some of it probably accurate and some innaccurate - but I think I ought to take a minute to tell you what the AMA is, and what it is NOT. Not necessarily for your information, but just to make sure that you understand that I know what it is and what it is not, because some of the things I'm going to say may make you think that I think it is something which it is not.

First of all, AMA is a federation of state medical associations; it is the major professional association for physicians in the United States; it has a membership of something over 215,000 physicians at the present time. It is not an educational institution in the ordinary sense of the word; it does NOT offer courses; it DOES prepare and present a great many scientific matters to the profession and to the world; it publishes and presents an Annual Journal, the most widely distributed medical journals in the world, and an additional ten specialty journals; it holds two major annual scientific meetings - the largest medical meetings in the world - where a whole variety of scientific papers are presented, some of them very good, and some of them very bad.

It has been interested for a good many years in education, and was involved rather early in the game in the development of standards for medical education, and for accreditation of medical education programs. As a matter of fact, AMA was one of the pioneers in the entire field of voluntary accreditation of educational programs and much of what AMA did many years before I became associated with it, has helped to lead to our present system of accreditation in higher education in this country today.

With that background, let me talk about AMA's role in paramedical education.

In the mid 1930s, The American Medical Association's Council on Medical Education, working in conjunction with appropriate technical societies and medical professional organizations, developed minimal training essentials for medical technologists, occupational therapists, and physical therapists. These "essentials" were formal descriptions of the educational standards which must be met by institutions seeking the approval of AMA for their educational programs. This marked the official beginning of the AMA's participation in educational programs in areas allied to medicine.

Minimal training essentials and approval procedures were developed for medical record librarians in 1943; for x-ray technicians in 1944; for medical record technicians in 1953; for inhalation therapists and cytotechnologists in 1962; and for certified laboratory assistants in 1967.

Currently, similar training essentials are in active preparation for nuclear medical technologists, and discussions of educational standards are in progress, or under consideration, for several other groups of allied health workers.

At the present time, over 2,000 educational programs in the nine allied fields which I have mentioned have been formally approved. These schools have a capacity of over 25,000 students and a current enrollment of approximately 19,000. Lists of approved schools in each of these nine areas are prepared annually and are available from AMA on request, through its Division on Medical Education.

In four of the areas - Medical Technology, Medical Record Library Science, Occupational Therapy and Physical Therapy - the educational programs are at the baccalaureate level. The other programs require two years of training at the college level, or less.

The numbers quoted sound reasonably impressive until one compares them with the total number of workers in the allied health field. Then it becomes clear that a great deal remains to be done. Depending upon how one defines an allied health worker, there are various estimates of anywhere from ten to twenty allied health workers for every physician. Since the number of physicians exceeds 300,000 it would follow that there must be several million other persons helping to provide health care in this country.

Many allied health fields, of course, have been carrying on their own programs of educational review and accreditation independently from medicine for many years. Others are in a developmental or formative stage where educational essentials have not yet been agreed upon, and where formal accreditation standards have not been established, nor procedures for educational review carried out.

There is probably no field which is growing more rapidly today than the allied health field. The amazing increase in the number and types of allied health workers has aroused great interest, and admittedly some apprehension, among physicians, educators and the general public. New types of health workers are constantly being created, or developing spontaneously, to the point where it is almost impossible to keep track of them, let alone provide any leadership and guidance for them. It seems that a new one appears on the scene almost every week, or at least every month, the year around.

What is AMA's concern with this? How does AMA relate to this rapidly burgeoning field? The answer, I believe, is simple and straightforward: AMA believes that it has great responsibility, and that it must be actively aware of and related to all of the allied health fields for one extremely important reason. That reason is that all of the allied health workers find their focus, indeed their reason for existence, in the care of the patient. Where the care of the patient is concerned, the physician ultimately has legal, moral and ethical responsibility.

As the major professional association for physicians, the American Medical Association keenly feels this responsibility and believes that it must be increasingly involved in the coordination, guidance and direction of the multiple, increasingly fragmented components of the health team, through which the care of the patient is provided.

Let us consider for a moment how allied health professions are born. While there may be a few exceptions, it is rare indeed for new educational programs in the allied health field -- by this I mean new technical fields in the allied health area -- to be initiated in educational institutions. Rather, they begin typically with the care of the patient, and then work backward into educational institutions.

Characteristically, the process develops as follows: First, a need is identified at the level of patient care. Then personnel begin to perform a function which fills this need. Generally, this happens because a physician trains somebody to help him with a patient care task. After a while, the assistant, whether originally a nurse, an office girl, an orderly, or a high school student working in a summer vacation, develops a certain proficiency in his task. He may then be hired away by another physician or by a hospital to perform the same task in a different surrounding. The original physician then trains another to replace him, and another, and another, as the services of such personnel come into demand.

Eventually, a small school is developed so that several persons may be trained simultaneously. If the need is genuine and has been identified elsewhere as well, other training programs spring up. As the numbers of those produced increase, the graduates of the program associate with each other and form some kind of society. Gradually they become interested in elevating practice standards in their own fields, and in improving the training programs by which their members are produced. Usually the group of physicians in whose special area of medicine the assistants have been trained then get together with the graduates of the programs and agree on certain kinds of standards. Formal statements and minimal educational programs are developed, and eventually, if the professional bodies agree on need and method, review of existing programs is carried out to determine whether they meet the standards.

Meanwhile, the technical society has grown in size, strength and number of members and has usually developed its own set of ethical standards and rules of conduct. Eventually the group usually seeks some kind of registry or certification or licensure within the legal and legislative channels of the various states. In this way a new profession is born.

It is only after many training programs have been in operation for some period of time, and formal educational standards have been developed, that responsibility for these programs is assumed by regular educational institutions. Ultimately they may become completely based in our traditional educational institutions: that is, our colleges and universities. Initially, the training programs are carried out under individual auspices in doctors' offices or in hospitals or in clinics. Later the clinical training and the basic higher education are linked to form a total professional program. Then we have professional education.

The AMA Council on Medical Education has typically come into this picture at the point where the medical specialist group and the technical society have begun negotiations on the establishment of educational standards and are designing procedures for review of existing educational programs to determine whether they meet these standards.

This is actually rather late in the game. AMA now believes that it should be involved at a much earlier state. This is one of the reasons for the development and creation of AMA's new Council on Health Manpower.

The new Council actually had its birth with the development of a special committee to study the relations of the allied health professions to medicine. Known as the McKeown Committee, this group studied the allied health field over a period of three years and published a report on its findings in June 1960. Following publication of this report, a special commission of the AMA House of Delegates was formed, known as the Stover Commission, under the title of Commission to Coordinate the Relationships of Medicine with Allied Health Professions and Services.

Only last year this commission was formally dissolved by the House of Delegates, with the recommendation that a Council on Allied Health Professions and Services of the AMA Board of Trustees be formed. More recently the board decided to combine this Council with its Committee on Health Manpower to form the Council on Health Manpower which has major charges in the allied health field.

This may be very confusing to you. I realize that you have to work in the AMA for years to know how a Committee or a Commission differs from a Council. Sometimes it is not clear even then. The process from committee or commission is a progressive step toward identification of a more permanent body, with more status, more power, more authority and more opportunity to determine policy and to produce long range changes. The Council on Health Manpower is a permanent standing committee and a Council of the Board of Trustees has more authority than either a temporary commission, or a committee.

The broad purpose of this new Council on Health Manpower is to conduct a continuing review of the relationships between medicine and the health related professions and services, in order to assure the most effective utilization of these services in the rendition of health care. More specifically, some of its purposes are to:

1. Define national manpower goals.
2. Recommend measures to meet these goals, and to estimate the resources needed to realize them.
3. Furnish leadership in the solution of the problem of the drastic shortage of health manpower that is confronting the American people.
4. Encourage studies to determine ways of improving all services for patients, and consider and evaluate innovations in the organization of health services that might contribute to better utilization of existing personnel.
5. Clarify roles of various members of the health team.
6. Identify and define existing and emerging groups now engaged in activities related to health care.
7. Assess manpower needs in the health related fields.
8. Cooperate in the recruitment of health related personnel.

9. Review the professional and legal qualifications of health related personnel.

10. Resolve jurisdictional problems.

11. Maintain liaison within the AMA and without the AMA, in responsibility for the development, evaluation, and accreditation of educational programs in the health related professions.

These are sweeping charges, and I think if any council ever did all these things it would be doing everything for everybody. I don't believe it will ever fully discharge these responsibilities. This gives you some idea of the scope of activity with which this new Council has been entrusted.

It is obvious, also, from a review of these charges, that there will be some overlap with the Council on Medical Education, for which the Division of Medical Education provides staff services.

The Council on Medical Education has long had a responsibility to study and evaluate education relating to the health professions and services important to medicine, including the development of programs approved by the AMA House of Delegates for the provision of a continuing supply of well qualified personnel in these fields.

In addition, approximately a year ago the Council on Medical Education, determining that it could not possibly cope with all of the problems confronting it in the vast and broad areas of medical education, requested and received permission from the Board of Trustees to form four standing Advisory Committees: one each in the areas of Undergraduate Medical Education, Graduate Medical Education, Continuing Medical Education, and Education for the Allied Health Professions and Services.

The charges to the Advisory Committee on Education for the Allied Health Professions and Services are quite numerous and extensive, and they overlap to a considerable extent with the charges to the new Council on Health Manpower.

I think the important thing here is to recognize that there are now two major bodies within AMA charged with responsibility for the allied health fields:

> One of them, with its focus on Education and the proper development of standards and programs for and in the educational aspects of the allied health fields - - -

> The other charged more with the practice relationships, the socio-economic problems, the jurisdictional problems, the legal matters, and the legislative matters.

The Council on Medical Education, in clarifying its intent in establishing its new Advisory Committee in this area, pointed out that its primary interest was in education and educational standards. It did not intend to go deeply into such matters as socio-economic problems, jurisdictional disputes, problems of practice, problems of registration, certification and licensure, and identification of new types of health workers, except insofar as these matters affected the educational standards of programs designed to produce these workers.

It is anticipated that in the future activities of AMA in the allied health field, when a new allied health group is born, AMA's attention will be focused on it initially through its new Council on Health Manpower. When the identification of the new group has been made, its duties delineated, and its proper role and function in the health care of the patient identified, the time will come when it will be important to develop educational programs and to measure the quality of existing programs against such standards. At this point, the Council on Medical Education will enter the scene, and will work with the appropriate medical specialty and allied groups to develop such standards and procedures for accreditation.

The question is sometimes asked whether AMA believes that it must control the allied health groups. If by "control," one means the assumption of responsibility for guidance, direction and maintenance of standards in education and practice, the answer is "Yes."

On the other hand, if "control" means domination, subjugation and imposition of unfair and harmful restriction or an attempt to exclude other groups which are concerned and interested, the answer is certainly, "No!" AMA's primary interest must be the care of the patient. In the allied health field AMA must help develop better groups of allied health workers, and to coordinate their activities for the better care of the patient. As the multitude of numbers and types of health workers increases, it becomes more and more important for some central body to exercise this function of coordination, both in education and in practice.

While many groups must and will be concerned and involved, in my opinion AMA cannot avoid its own central responsibility any more than the physician can avoid his responsibility, legally and morally, for the care of the patient. It is just that simple and that direct.

Admittedly, in the past AMA has not discharged its responsibility as effectively as it might have. The reasons are numerous and complex. They boil down to a general lack of understanding and full appreciation of the true function and importance of allied health workers.

It is not my intention to minimize the great contributions which have been made in the past by many individual physicians, and by dedicated groups of specialists, in the development of specific technical areas. Nor is it my intention to overlook the outstanding staff work in this field by men like Dr. John Hinman, and Dr. A. N. Taylor. But it was very difficult, in past years, to attract the attention of most physicians or to interest the major AMA councils and committees in the problems of the allied health field. I would like to add that while AMA has not done all that it should have done by any means, when you try to find any other single organization which has done as much, I don't think you will be able to do so. I think the AMA has done more than anybody else has done in the development of educational standards and maintenance of good education in the allied health field - but it has not done nearly enough.

Today, I believe that the situation has changed, and that the era of disinterest and relative neglect is rapidly disappearing. More and more the official bodies in medicine are coming to appreciate the role which paramedical personnel must play in the health care of the public.

A great deal remains to be done. One of the most important tasks is to educate physicians to work effectively with allied health personnel. We often speak of the physician as the Quarterback or the Captain of the health team. Unfortunately, too often the physician does not even know who plays on the team, let alone the functions and proper assignments of the players.

This can be corrected by education and the education must come at all levels. For the future generation of physicians, there must be active instruction in the health team concept at the medical student level. And, if the instruction is to be effective, care by the health team must be practiced in the medical centers with medical students and allied health students working together in the care of the patient. The medical student, the intern, the resident must learn who the allied health personnel are, what they do, and how their talents can be utilized most effectively for the best interests of the patient. This will take some doing, for it is rarely carried out in this fashion today in the modern medical center.

Equally important is a new concept of continuing education, based on the health team approach; for whole new generations and categories of allied health workers have sprung up, whose role and function are relatively unknown to many practicing physicians, particularly those of the older generation.

If continuing education programs continue to be segregated along professional lines, it will be difficult for older physicians to learn the proper utilization of and cooperation with allied health technical and professional workers. But if these programs are based on the care and management of the patient, and if allied health workers participate in the programs at levels appropriate for them, mutual respect and a new appreciation of the health team concept can develop.

A major problem at the present time, and one which promises to be increasingly difficult, is the fragmentation of health services. The development and growth of new health fields will aggravate this problem, both at educational levels and at practice levels. In education there is a strong tendency for new, separate, autonomous programs. Offsetting the trend to some extent is recognition that many different types of programs can develop from a common educational base.

I believe firmly in the concept of a core curriculum, to which both of the previous speakers and a number yesterday referred, which can provide a good, sound foundation for various types of terminal clinical training. It is also encouraging to note the growth of such programs in many colleges.

Finally, at the practice level, all programs must come to a focus on the patient, and the provision of patient care. The coordination of the services of the various allied health workers must be the responsibility of the physician.

We obviously need all kinds of additional health workers, since all are in short supply. But as Rashi Fein and others have pointed out, the crucial matter is not health workers, but health services. Health workers are important not for themselves, but because they provide health services and meet the health care needs of the public.

Educational programs which do not keep this essential fact uppermost in their design and planning will soon become sterile and ineffective. Eventually, therefore, the health worker must relate to the physician, and he in turn must function in full cooperation with the health worker. This concept must pervade both practice and education.

In summary, I have tried to find a word or phrase which identifies AMA's role in paramedical education; but it is very difficult to do this effectively, and to do it without creating some kind of unpleasant atmosphere, some hostility and some resentment. As many of you know, emotions are rather strong in some areas. Problems of status, of privilege, of prior right of jurisdiction in certain areas are sticky ones which require very careful negotiation.

When I think of AMA's role in terms of a single word, I really can't find one which embraces all the things I'm talking about. Certainly it is NOT that of a dictator or a czar. The term of Coordinator, or Director, begins to approach the concept; the term "director" has too much authoritarian sound to it; the term "coordinator" is reasonable but it does not go far enough. The problems of the allied health field certainly are the problems of medicine and accordingly they must be the problems of the AMA. AMA would like to think of itself as a leader in this field, but the term must be earned, and not assumed. Coordination is important but it is not the sole function; because there must be some authority if there is also responsibility.

The best which I can do at this time is to say that as I see it, the AMA role should be one of leadership and guidance, working in full cooperation with all organizations, institutions and individuals who are involved, concerned and related to the allied health field.

Role of American Hospital Association in Paramedical Education

Frederick N. Elliott, M.D.

On behalf of the American Hospital Association, I would like to express our gratitude for being allowed to participate in this meeting on a subject in which our Association has such interest and is devoting so much of its efforts, study and support.

I would like to tell you a bit about the American Hospital Association so that you may understand the sources of its interest and the responsibility that it feels in this area.

The American Hospital Association is about 70 years old, and was founded originally by a group of hospital administrators - or superintendents as they were called in those days - who were concerned about providing better hospital care for their patients. This has been the central core, the theme, the objective of the American Hospital Association down through the years: Better hospital care for the people. Now strangely enough this purpose which has served so well and has directed the aims, purposes and goals of the Association for many years may become less central in the immediate future; as the hospital begins to change and to comprehend itself as a different kind of institution.

While the American Hospital Association down through the years has been primarily oriented towards the problems and the responsibilities of hospital administrators, the changing role and nature of the hospital is decreeing that this national organization will begin to include other kinds of people. More and more there is a conscious effort to involve trustees of hospitals, educating them to the extent of their responsibilities and to the opportunities that are presented to them in their duties in establishing policies and programs for their hospitals.

There is, of course, and will continue to be an interest in the problems of administrators in the management of hospitals and in the work done by all the people who function there.

More particularly there is an increasing realization that the physician in the hospital is not operating by himself in a vacuum and using the hospital as his workshop - which is a misconstruction still prevailing among some physicians. Rather, as Dr. Ruhe told you, he is no longer utilizing just his own knowledge and skills, but more and more is responsible for heading up a team which includes many different skills and technologies, and many different areas of knowledge, all of which are applicable in the diagnosis and treatment of his patient. He is asked to change from the private entrepreneur, from the soloist, to the coordinator and the person who is responsible for realizing the resources that the modern hospital presents on behalf of the care of his patient, and to marshal these resources, to collaborate, to coordinate, and to become responsible for the total product of the team effort.

If this is true, we are also beginning to realize that physicians rightfully have a much more central and important place both individually and as a group in the hospital than they have been accorded down through the years; that the apparent division of interests between trustees and administrators and the medical staff is no longer valid, if it ever was; and that this division of interests is now destructive to the goals that we must pursue.

We are beginning to realize that physicians have a proper place in hospital management, in the determination of its policies and in the directions that it must take. Already de facto, they exercise this prerogative because physicians control 75 percent of what goes on in the hospital beyond the power of any administrator to modify. This is reflected in their patterns of practice in the matters of staffing, financing, accommodation and other areas. Thus it is necessary to involve physicians in management decisions and in taking responsible attitudes that go beyond merely the treatment of their individual patient into the understanding of what the hospital is and must become in the community, and their responsibility for their participation in decreeing how its resources will be used.

As we see the hospital as a new type of institution, we begin to see its responsibility for education also changing. Originally and very naturally, as administrators tried to create hospitals which would give better care to their patients, they became concerned with the levels of skill that were available to them.

Originally there wasn't much they could do because the primary concern in filling the personnel role of a hospital was to take advantage of people economically under the guise of charity - to have low paid people. The institution concerned itself very little with these people as individuals, or as human beings with their own aspirations, their own future and their own lives. I'm glad to tell you that now almost every last trace of that has been removed. The discrepancy in salaries in hospitals and the health care field that existed has pretty much been removed.

I'm also proud to say, this has happened as much by the appeal to the conscience of trustees and administrators and others as by the activities of employees themselves.

If the role of hospitals is changing, then the role of the American Hospital Association in education must also change.

The AHA is primarily an institution, a membership institution. Its basic membership is some 9,000 institutions: hospitals, long-term-care facilities, rehabilitation centers, and so forth. Comprising some 9,000 institutions in addition to some 15,000 personal members, it actually has on its membership a potential for participation of over 2,000,000 people, and it has responsibilities to represent these people in all areas which affect hospitals nationally.

Originally the AHA was concerned with the way hospitals were operated internally; and, therefore, with the knowledge, the skills and the competence that were available to hospitals through their personnel. Being an originator and leader, AHA had to establish levels of skill, and determine the content of knowledge and training for these skills. As a result down through the years a tremendous educational activity has transpired.

To give you an idea of the extent of this activity, there have been manuals written for the use of hospital employees on every conceivable subject - from blood banking to accounting, and even the zoological aspects of the care of laboratory animals. These manuals are constantly kept updated and in circulation. There have been detailed analyses of certain job functions, and detailed courses written for them - courses for nurses' aides, ward clerks, food service workers, housekeeping aides, etc. Some of these courses have a distribution of over 70,000 each. Student manuals are accompanied by instruction manuals for those who do the supervising and training.

AHA has an on-going educational program not limited just to publications but includes institutes and workshops held at the headquarters in Chicago and throughout the United States. These are several hundred of these workshops and institutes each year and involve thousands of people.

So AHA's primary concern has been for the excellence and the competence of the people who work within the hospital in the tasks that are assigned to them. But things are changing. There is an increasing number of more effective state hospital associations. The AHA is moving away from the detailed "how-to-do-it" concern, delegating this responsibility to the local agencies who are capable of carrying out a program in a way which is more locally appropriate. AHA is now more concerned with general aspects of the educational responsibilities of hospitals, and these responsibilities change as the hospital changes. The hospital is now faced with changes that are as great as those which occurred with the advent of bacteriology and asepsis.

The reason I am speaking to you extemporaneously is that any incoherence which results merely reflects, I think, very accurately the times in which we live - times when changes in a situation are occurring even while we contemplate them.

AHA's purpose, first of all, is to have a hospital organized so sensitively and so flexibly that it can respond to the changing needs and the changing expectations that are being placed upon it.

AHA is currently encouraging hospitals to offer more comprehensive care - care which extends beyond the usual 5-7 days of acute care devoted to the diagnosis and treatment of a life-threatening or seriously disabling illness. We are also encouraging hospitals to become more effective in extending care to people on an ambulatory basis, realizing that there is an element of morbidity in taking a person unnecessarily away from his environment just for the convenience of an institution.

Comprehensive care is being concerned with the tremendous interruption and sometimes cessation of treatment which occurs following the discharge from the acute area , and seeing that people continue to get appropriate treatment until their maximum rehabilitation potential has been achieved. More and more hospitals are beginning to envision their future and their present role and responsibilities in this light.

Now if this kind of care is possible, then it greatly changes the knowledge and the skills which must be available to the hospital, to a broadening team. More important than just comprehensive care or continuous care is "comprehensive" in another sense. We accept the world health definition of health as "A state of physical, mental and social well-being." We are beginning to comprehend that in every illness the three components are more disabling, and in a long-term sense, more crippling than the physical. This means new members must be added to our team of people who diagnose and treat. It means that we have a responsibility to analyze the social and psychological components of the illness and to minister to them or at least do them no harm; but not to exchange one kind of morbidity for another simply for institutional convenience because of our rigid and traditional ways, or because of our limitation of skills. We cannot simply apply our particular skill without regard to its appropriateness to the patient's illness, and whether or not it results in another morbidity replacing the one that we are treating.

This kind of service calls for a whole myriad of skills and knowledge to be available to the hospital under the leadership of the physician in the treatment of his patient. It completely changes the educational responsibilities of the hospital. The Board of the American Hospital Association, elected members from around the country, has produced several statements on these changes. These statements reveal a great deal of thought and acceptance of responsibility on the part of the hospital in this changing scene.

One of these statements concerns the hospital's role in providing the clinical component of medical and paramedical education, and the clinical setting for this education and training. The hospital accepts this responsibility because it is obvious that the only way you can learn an art is to learn to practice it; and the only place you can learn to treat patients is where patients are. Regardless of academic content or the base upon which this principle may be fundamentally established, there are certain responsibilities that the hospital must assume, and, one is to participate in training programs by making themselves the clinical focus of the educational process.

Another is somewhat contradictory. It has to do with the responsibility the hospital has for its patients. The first obligation is the safety and welfare of patients; so the hospital has to be sure that the educational process improves the care of patients and does not threaten it.

We are inclined, of course, to say that any hospital that has an educational program is better than one that has none. But this is absolute nonsense! Because where unsupervised students function, the welfare of the patient is in great jeopardy. Anybody who is an enthusiastic muckraker and wants to write a book to make a lot of money could get right into this and find a gold mine!

Fortunately, I don't think there is anybody around who is that low, or at least no one has risen to the surface. We have a tremendous responsibility here to make sure that this alleged truism is in fact true - that when we undertake an educational program, we do so under such circumstances with such vision and with such supervision that the care of the patient is actually improved and certainly not impaired.

No hospital for reasons of prestige or way of obtaining cheap service from employees has a right to go into an educational program unless it, first of all, reduces the service component of students to a minimum; makes sure that it is adequately supervised; and that the level of care is raised, not lowered, as a result.

If this is true, hospitals have an obligation to seek the right kind of personnel. The AHA has a very active program in career recruitment, attempting to involve young people who are looking around for something to make their lives worthwhile, and just might find it in the health care field.

More important than recruitment, the hospital has a responsibility to analyze the areas of knowledge that will promise a productive life in the health field. Hospitals are being told that they have an obligation to cooperate with academic institutions; they have a right to be heard as to what basic curricula should be; the attitudes and basic intellectual component should be of a person who can find a career in the health field. Hospitals have a responsibility to form the closest kind of affiliations. They first encourage and help academic institutions to have adequate curricula for students; to perform a socially useful function in producing people who have the basis for a rewarding career; and to make sure that the two processes - the practical and the academic - are intermeshed in the most effective way.

They also have an obligation not to waste their money in libraries and laboratories and lecturers that can be better carried on in academic settings.

Very acute at the present time is the moral responsibility of hospitals to analyze to what extent the educational process in a hospital should be funded by the income from patients. To what extent should a patient pay, and what is actually a surcharge? Should patients pay more because there's an educational program going on within that hospital? To what extent should the production of people for the health field be a national responsibility? If this is a national response, how should hospitals speak effectively to assure that that responsibility is met from the sources that should support it, rather than from a tax on individual patients?

These are all very difficult questions. They are the questions with which the AHA is grappling. It has 70 years of creditable performance in the areas of how-to-do-it training, workshops, institutes, and publications. It is now concerned with curricula outside of areas that should come from academic sources, and to coordinate the academic with the clinical resources to turn people from students into persons who can function in the health care setting --- To take an educated girl and make her into a nurse; an educated boy and make him into a physician; a person who is beginning to see the first glimmerings of some of their own potential and self respect into one of the paramedical sciences or arts or crafts that are part of the health care complex.

These are all the present considerations and all have policy considerations, financial considerations and social as well as the detailed considerations of curriculum content and so forth. But we have another component too, and another responsibility. You know that for every patient in a hospital there are three employees. Today, a patient is in the hospital an average of 7 1/2 days. Less than twenty percent have an actual life-threatening situation.

Since the so-called "health industry" is now third in the country in terms of dollars and people, and will probably move up from that when there is a sensible national priority established and people begin to think seriously about this situation, the hospital is beginning to assume a responsibility that goes beyond, as I spoke at the outset, the care of patients. It now feels a responsibility for the people who give their lives and careers in that field - three people for every patient; thirty years as against one week!

This has been met to some extent by removal of exploitation and wage differentials. We are beginning to look for ways to accomplish the very things that you've been discussing in the last few days - to provide career mobility for these people. In line with their potential and their vision and their extending horizons, opportunities are provided so that they can move up laterally into areas in which they find their talents, their abilities and their self respect really fulfilled.

We are beginning to see that as a result of this kind of planning such ideas as core curriculum and progress in each individual subject at different levels appropriate to the job can be realities and that we must work them out with educational institutions and see that they really do become realities to people in the health care industry.

AHA now represents not 600,000 patients, but over 2,000,000 health care employees, and we are beginning to have some relevance to a new kind of disease. Previously we were primarily concerned with physical or mental illnesses. Now we are concerned with physical, mental and social morbidity.

But I would remind you that the hospital right now is only a component of an illness care system and not a health care system. It seems reasonable, in fact essential, that as we begin to solve the more acute problems of illness that we move towards a concept of a health care system. A health care system is something very different from an illness care system.

First of all, we have to define "health," and not only in terms of physical, mental and social well-being. Maybe the best definition I've been able to think of is a healthy person is one who is in positive equilibrium with his environment. I didn't say just "equilibrium" which means that he merely endures or survives; I said "positive equilibrium." A person is able to endure, and he's able to survive; but he's also able to change - he's able to change his environment into something more to his liking.

Now this means that we have to introduce into the concept - not the diagnosis that a person has tuberculosis and therefore should get a certain antibiotic, or that he has a hernia and therefore should undergo surgery - but a respect for health in the patient's terms. A recent survey of several hundred old people revealed that out of 700, about 236 had no complaint, and yet when they were examined carefully they were found to have as many physical, chemical and other disabilities as anybody else, as the total group. Yet these people were relatively happy.

To institutionalize them or operate on them or center their attention on their physiological or anatomical defect would be to replace health with illness. We have to create an institution which has respect for the individual and respect for his expectations, and has the determination to support his health rather than to identify merely his illness and then focus on it.

If this is the case, the hospital is now facing a future which is not so much illness directed but health directed; and it is facing its responsibility for the people for whom it is truly responsible; that is, its own personnel, over 2,000,000 people, giving their lives, finding whatever satisfaction they do out of life in the health care field.

If this has any validity, and I believe it does, then the hospital - or the hospital as the focus or the center of a health care system - becomes very relevant to the most important, the most threatening, and the most malignant disease facing the country today. That is the one on which our President has recently appointed a commission; the one which manifests itself in some of the horrible things that we've seen in the last few months, a social disease; a social disease deserving the term much more than the way the word "syphillis" used to be whispered. A question has arisen as to whether or not we can create a society in which the sole purpose is a better quality of life in which the key and the touchstone is reverence for life and respect for it; in which we identify illness in anybody who believes that he has a scale of values which enables him to judge and execute other people.

Down through the years we have learned the Fabians and the Marxists have learned, unfortunately or unhappily, that merely making a society mechanically or financially better does not make better men. We've learned that art and aesthetic approaches above do not make better men. Men play Brahms and weep at Wagnerian operas, then without a qualm go back and turn on the gas to liquidate part of a whole population.

We know that sterile intellectual pursuits do not make better men. One of our great concerns is the way certain segments of the academic community are moving into their institutions and closing the doors against the realities of society and life, and finding their satisfaction in abstractions - something like playing chess. This is repetitious of the dark ages. People went into monasteries and took their candles and their books with them and turned their backs on what was going on in the world outside. We are at such a juncture today where such decisions are being made.

But hospitals and the health care system continue to exist as the most viable and the most challenging elements in our entire society. They involve intellectual elements, the development of skills and the application of knowledge; and they do these things within a frame of reference to human values and human compassion. At the present time they do it within the context of the voluntary system in which the individual can elect to give; the community can elect to give; and the whole organizational fabric can elect voluntarily on its own initiative to operate an enterprise that is based on the concept that life is worth living.

I would submit to you that in the health care field as we move from mercy and compassion expressed in the care of the acutely ill to a more comprehensive idea of restoring each person to his maximum potential; to a more comprehensive idea of establishing standards for health, establishing preventive processes, and by education protecting health before it is lost; by combining manual skills, intellectual content, personal commitment all based on human values, we will have something that is more relevant to the problems of a sick society than any other institution that exists.

By retaining it within the voluntary system we will have a process that proves that the fundamental concept on which this country was founded is still viable today and will be in the future. This process is education. Not merely intellectual achievement or the acquisition of skill or income, but the realization of each individual that life - his life - is worth living.

I would submit to you that there is no area of human activity that exceeds the health care field, in addressing itself to this situation; and when placed beside all other, to me, the "all others" are relatively passing and unimportant.